KENWOOD

TS-430S

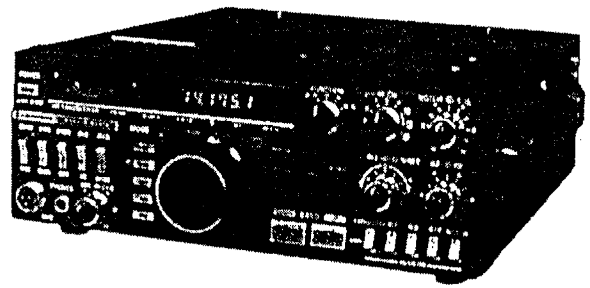
HF TRANSCEIVER

KW-SENDEEMPFÄNGER

EMETTEUR-RECEPTEUR COMBINE HF

TRANSCEPTOR HF

RICETRASMITTORE HF



INSTRUCTION MANUAL

BEDIENUNGSANLEITUNG

MODE D'EMPLOI

MANUAL DE INSTRUCCIONES

MANUALE D'ISTRUZIONE

● SPECIFICATIONS ● TECHNISCHE DATEN
● CARACTERISTIQUES TECHNIQUES ● ESPECIFICACIONES ● DATI TECNICI

[GENERAL]
Transmitter Frequency Range:
160, 80, 40, 30, 20, 17*, 15, 12*, 10 meter Amateur bands
Receiver Frequency Range:
150 kHz to 30 MHz
Mode:
A3J (LSB, USB), A1 (CW), A3 (AM), F3 (FM)
Antenna Impedance:
50Ω
Power Requirement:
12.0 to 16.0 V DC (13.8 V nominal)
Power Consumption:
20A approx. in transmit mode
1.2A approx. in receive mode
Dimensions:
270 (10.6)W × 96 (3.8)H × 275 (10.8)D mm (inch)
Weight:
6.5 kg (14.3 lbs.)

[TRANSMITTER]
Final Power Input:
160m – 15m band
SSB: 250WPEP
CW: 200WDC
FM: –
AM: 60W
10m band
SSB: 250WPEP
CW: 200WDC
FM: 120W
AM: 60W
Modulation:
SSB – Balanced Modulation
FM – Variable Reactance Direct Shift (with FM-430 optional accessory)
AM – Low Level Modulation (IF stage)
Carrier Suppression:
Better than 40 dB
Unwanted Sideband Suppression:
Better than 50 dB
Harmonic Content:
Less than –40 dB
Maximum Frequency Diviation (FM):
±5 kHz (with FM-430 optional accessory)
Microphone Impedance:
500Ω to 50 kΩ

[RECEIVER]
Circuitry:
SSB, CW, AM – Double conversion Superheterodyne
FM – Triple Conversion Superheterodyne
Intermediate Frequency:
1st IF – 48.055 MHz
2nd IF – 8.83 MHz
3rd IF – 455 kHz (FM only)
Sensitivity:
Frequency: 150 kHz – 500 kHz
SSB/CW (10 dB S/N): Less than 1 μV
AM (10 dB S/N): Less than 13 μV
FM (30 dB S/N): –
FM (12 dB SINAD): –
Frequency: 500 kHz – 1.8 MHz
SSB/CW (10 dB S/N): Less than 4 μV
AM (10 dB S/N): Less than 40 μV
FM (30 dB S/N): –
FM (12 dB SINAD): –
Frequency: 1.8 MHz – 30MHz
SSB/CW (10 dB S/N): Less than 0.25 μV
AM (10 dB S/N): Less than 2.5 μV
FM (30 dB S/N): *Less than 1 μV
FM (12 dB SINAD): *Less than 0.7 μV
* with FM-430 optional accessory
Image Ratio:
More than 70 dB (1.8 to 30 MHz)
More than 50 dB (FM-3rd image ratio)
IF Rejection:
More than 70 dB (1.8 to 30 MHz)
Selectivity:
Selectivity –6 dB
SSB/CW: 2.4 kHz
AM *1: 6 kHz
FM *2: 15 kHz
Selectivity –60 dB
SSB/CW: 4.4 kHz
AM *1: 12 kHz
FM *2: 32 kHz
*1 with YK-88A optional filter
*2 with FM-430 optional accessory
Frequency Stability:
Better than ±30 × 10⁻⁶ (0°C to +50°C) Within ±200 Hz from 1 to 60 minutes after turn-on, within ±30 Hz any 30 minute period thereafter
Frequency Accuracy:
Better than 10 × 10⁻⁶
RIT Variable Range:
More than ± 1 kHz
Audio Output Impedance:
4Ω to 16Ω
Audio Output Power:
More than 1.5W across 8Ω (at 10% distortion)

* Will transmit on the new 17 and 12 meter bands, Lockout factory installed to prevent accidental transmission. (Note for U.S.A. only)

Note: Circuit and ratings subject to change without notice due to developments in technology.

[ALLGEMEINES]
Sender-Abstimmbereich:
160, 80, 40, 30, 20, 17*, 15, 12*, 10m Amateur-KW-Bänder
Empfänger-Abstimmbereich:
150 kHz – 30 MHz, durchgehender Kontrollempfänger
Betriebsarten:
J3E (USB/LSB), A1A (CW), A3E (AM), F3E (FM) mit Modul FM-430
Antennenimpedanz:
50 Ohm
Betriebsspannung:
12,0 – 16,0V – (Nennspannung 13,8V –)
Stromverbrauch:
20A bei Sendebetrieb
1,2A bei Empfangsbetrieb
Abmessungen (B × H × T):
270 × 105 × 340 mm
Gewicht:
6,5 kg

[SENDETEIL]
Leistungsaufnahme:
160m – 15m-Band
J3E: 250 WPEP
A1A: 200W
F3E: –
A3E: 60W
10m-Band
J3E: 250 WPEP
A1A: 200W
F3E: 120W
A3E: 60W
Modulation:
J3E (SSB) – durch Balancemodulator
F3E (FM) – Frequenzmodulation (mit F3E-Modul FM-430)
A3E (AM) – Amplitudenmodulation mit niedrigem Pegel (im Zf-Teil)
Trägerunterdrückung:
> 40 dB
Seitenbandunterdrückung:
> 50 dB
Oberwellenabstrahlung:
< –40 dB
Max. Frequenzhub (F3E)
±5 kHz (mit F3E-Modul FM-430)
Mikrofonimpedanz
500 Ohm – [illegible] Ohm

[EMPFANGSTEIL]
Schaltungsart
J3E, A1A, A3E – Doppelsuper
F3E – Dreifachsuper (nur mit Modul FM-430)
Zwischenfrequenzen:
1. Zf – 48,055 MHz
2. Zf – 8,83 MHz
3. Zf – 455 kHz (nur mit Modul FM-430)
Eingangsempfindlichkeit:
Frequenz: 150 – 500 kHz
J3E/A1A (10 dB S/N): < 1 μV
A3E (10 dB S/N): < 13 μV
F3E (30 dB S/N): –
F3E (12 dB SINAD): –
Frequenz: 500 kHz – 1,8 MHz
J3E/A1A (10 dB S/N): < 4 μV
A3E (10 dB S/N): < 40 μV
F3E (30 dB S/N): –
F3E (12 dB SINAD): –
Frequenz: 1,8 – 30 MHz
J3E/A1A (10 dB S/N): < 0,25 μV
A3E (10 dB S/N): < 2,5 μV
F3E (30 dB S/N): < 1 μV*
F3E (12 dB SINAD): < 0,4 μV*
*) mit F3E-Modul FM-430
Spiegelfrequenzunterdrückung:
70 dB (1,8 – 30 MHz)
50 dB (F3E, 3. Zf-Stufe)
Zf-Unterdrückung
70 dB (1,8 – 30 MHz)
Trennschärfe
Betriebsart: –6 dB Bandbreite
J3E/A1A: 2,4 kHz
A3E *1: 6 kHz
F3E *2: 15 kHz
Betriebsart: –60 dB Bandbreite
J3E/A1A: 4,4 kHz
A3E *1: 12 kHz
F3E *2: 32 kHz
*1) mit Zusatz-Quarzfilter YK-88A
*2 mit F3E-Modul FM-430
Frequenzstabilität:
> ±30 × 10⁻⁶ (0°C bis +50°C), ±200 Hz innerhalb der ersten Betriebsstunde nach dem Einschalten, danach ±30 Hz nach jeweils weiteren 30 Minuten im betriebswarmen Zustand.
Frequenzgenauigkeit:
> 10 × 10⁻⁶

● PREPARATION FOR USE ● BETRIEBSVORBEREITUNGEN ● MISE EN PLACE PRELIMINAIRE ● PREPARACION PARA LA UTILIZACION ● PREPARATIVI PER L'USO

INTERCONNECTION

Connect the transceiver as illustrated.

ANSCHLUSS-SCHEMA

Den Transceiver wie auf Abb. 3-1 und 3-2 gezeigt, anschließen.

INTERCONNEXIONS

Connecter l'émetteur-récepteur comme cela est illustré.

INTERCONEXION

Conectar el transceptor como se muestra en las ilustraciones.

COLLEGAMENTI

Collegare l'apparecchio nel modo illustrato.

Fixed Station Connection
Anschlüsse bei ortsfestem Betrieb
Connexions de station fixe
Conexión a modo de estación fija
Collegamenti per l'uso come stazione fissa

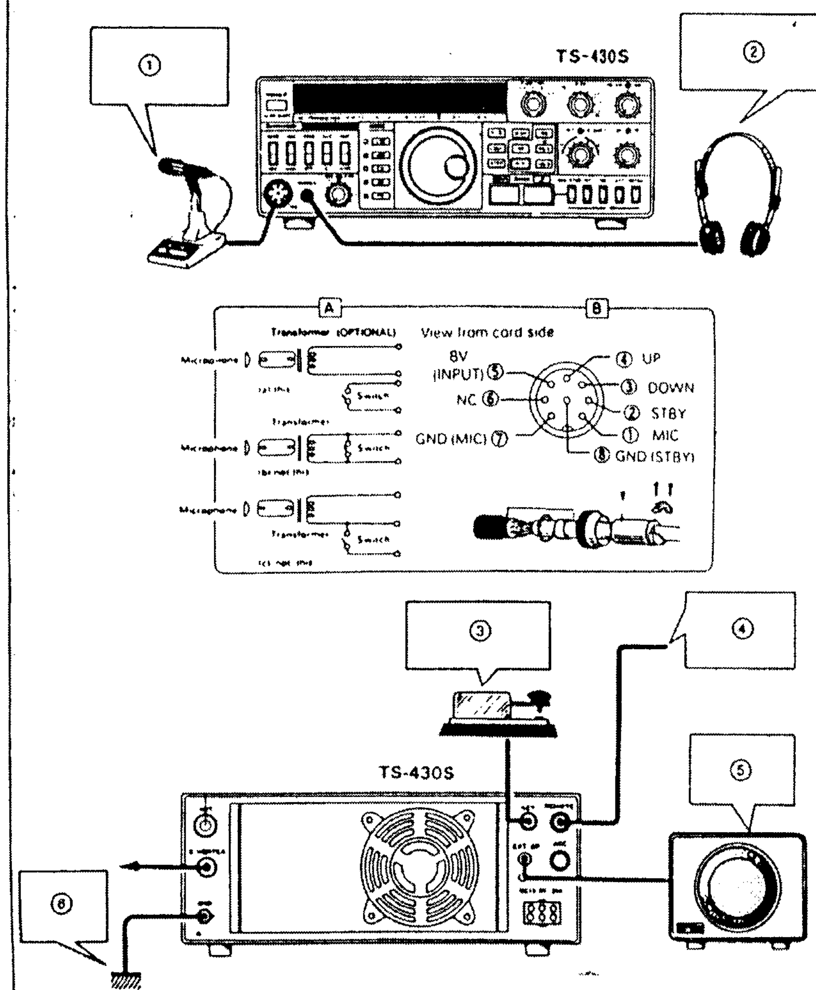


Fig. 3-1
Abb. 3-1

Antenna and Power Supply Connection for TS-430S
Antennen- und Spannungsversorgungs-Anschlüsse für TS-430S
Connexions de l'alimentation et de l'antenne du TS-430S
Conexión de la antena y fuente de alimentación para el TS-430S
Collegamento dell'antenna e per l'alimentazione del TS-430S

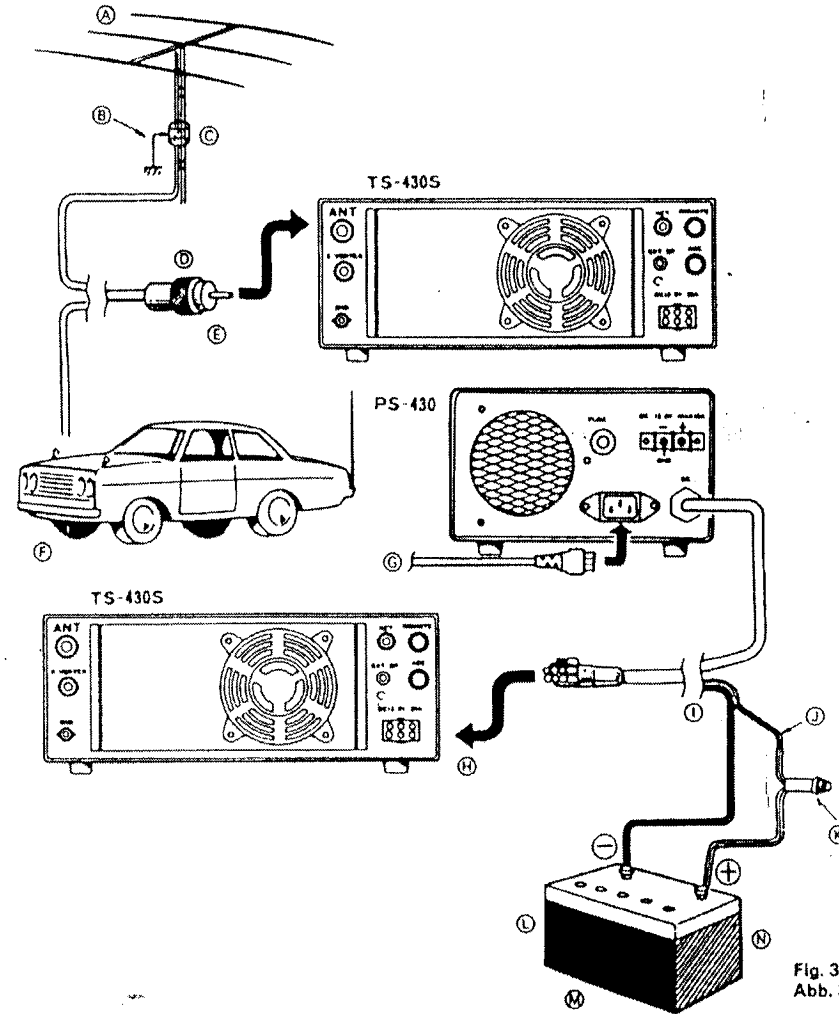


Fig. 3-2
Abb. 3-2

① **Microphone**
Either a low or high impedance microphone (500Ω to 50 kΩ) can be used. The PTT switch should be isolated from the mic circuit (shown in |A|). Use a microphone with a separate switch and MIC line so both PTT and VOX are available.

② **Headphones**
Use headphones of 4 to 16Ω impedance. The optional HS-5 or HS-6 headphone are best suited for use with the TS-430S.
Stereo-type headphones can also be used.

③ **Key**
For CW operation, connect your key to the KEY jack at the rear. Use shielded cable.

④ **REMOTE connector**
External accessories can be connected to the TS-430S through the REMOTE connector. The PTT terminal can be used for remote control of transmit/receive operation.

⑤ **External speaker**
Besides the built-in speaker, an external speaker can also be used. Connect to the rear EXT SP jack using the supplied plug.

⑥ **GND terminal**
It is recommended that a ground lead be connected to the GND terminal at the rear of the set to prevent the possibility of electric shock, TVI and BCI. Use as short and heavy a lead as possible.

Ⓐ Fixed station operation
Ⓑ Lightning arrester
Ⓒ For fixed station antenna installation, see Page 10.
Ⓓ UHF type connector
Ⓔ Antenna socket
Ⓕ Mobile station operation
Ⓖ To AC outlet
Ⓗ DC power terminal
Ⓘ Black-Grey
Ⓙ Red-White
Ⓚ Fuse 20A
Ⓛ Connect battery to DC power
Ⓜ 12V Battery
Ⓝ Note: Use either battery or regulated supply, but not both.

① **Mikrofon**
Ein Mikrofon mit niedriger oder hoher Impedanz (500Ω bis 50 kΩ) kann verwendet werden. Der PTT-Schalter sollte von der Mikrofonleitung getrennt werden (in A gezeigt). Ein Mikrofon mit einem separaten Schalter und Mikrofonkabel verwenden, so daß sowohl PTT-als auch VOX -Betrieb möglich ist.

② **Kopfhörer**
Einen Kopfhörer mit einer Impedanz von 4 bis 16Ω verwenden. Für den TS-430S sind die als Sonderzubehör erhältlichen Kopfhörer HS-5 oder HS-6 am Besten geeignet.
Stereo-Kopfhörer können auch verwendet werden.

③ **Morsetaste**
Für A1A-Betrieb die Morsetaste an der KEY-Buchse an der Rückseite anschließen. Ein abgeschirmtes Kabel verwenden.

④ **Fernschalt-Anschluß**
Externe Geräte können über den REMOTE-Anschluß an den TS-430S angeschlossen werden. Der PTT-Kontakt kann auch für Fernbedienung des Sende- und Empfang-Betriebs verwendet werden.

⑤ **Externe Lautsprecher**
Neben dem eingebauten Laut sprecher kann auch ein externer Lautsprecher verwendet werden. An die EXT SP-Buchse an der Rückseite mit dem mitgelieferten Stecker anschließen.

⑥ **Erdungsanschluß (GND)**
Es wird empfohlen, ein Erdungskabel an die GND-Klemme an der Rückseite anzuschließen, um elektrische Schläge, Rundfunk- und Fernsehstörungen zu vermeiden. Das Kabel so kurz und dick wie möglich halten.

Ⓐ Ortsfester Betrieb
Ⓑ Blitzableiter
Ⓒ Antennen-Installation bei ortsfestem Betrieb siehe Seite 10.
Ⓓ PL-259-Stecker
Ⓔ Antennenbuchse
Ⓕ Mobiler Betrieb
Ⓖ Zur Netzsteckdose
Ⓗ Gleichstrom-Anschluß
Ⓘ Schwarz-grau
Ⓙ Rot-Weiß
Ⓚ Sicherung 20A
Ⓛ Batterie an Gleichstrom-Anschluß anschließen.
Ⓜ 12V-Batterie
Ⓝ **Hinweis:** Entweder Batterie- oder Netzversorgung verwenden, aber nicht beide zusammen.

① **Microphone**
On peut utiliser un microphone à basse ou à haute impédance (500Ω à 50 kΩ). L'interrupteur PTT doit être isolé du circuit du micro (indiqué en |A|). Utiliser un microphone avec un interrupteur et une ligne MIC séparés de manière à pouvoir disposer du PTT et du VOX.

② **Casque d'écoute**
Utiliser un casque d'écoute d'une impédance de 4 à 16Ω. Les casques d'écoute en option HS-5 ou HS-6 répondent le mieux à l'utilisation du TS-430S.
On peut également utiliser un casque d'écoute de type stéréo.

③ **Touche**
Pour le fonctionnement CW, relier votre touche à la prise KEY se trouvant à l'arrière. Utiliser un câble blindé.

④ **Connecteur de commande à distance (REMOTE)**
Les accessoires externes peuvent être reliés au TS-430S grâce au connecteur REMOTE. On peut utiliser la borne PTT pour les opérations de commande à distance de transmission et de réception.

⑤ **Haut-parleur externe**
On peut utiliser également un haut-parleur externe en plus du haut-parleur intégré. Le relier à la prise EXT SP se trouvant à l'arrière de l'appareil en utilisant la fiche fournie.

⑥ **Borne de mise à la terre (GND)**
Il est conseillé de relier un conducteur de mise à la terre à la borne GND se trouvant à l'arrière de l'appareil afin de prévenir toute électrocution, TVI et BCI. Utiliser un conducteur aussi court et aussi lourd que possible.

Ⓐ Fonctionnement de station fixe
Ⓑ Paratonnerre
Ⓒ Pour l'installation de l'antenne de station fixe se reporter à la page 10.
Ⓓ Connecteur de type UHF
Ⓔ Douille d'antenne
Ⓕ Fonctionnement de station mobile.
Ⓖ Vers la prise secteur
Ⓗ Borne d'alimentation CC
Ⓘ Noir-Gris
Ⓙ Rouge-Blanc
Ⓚ Fusible 20A
Ⓛ Relier la batterie à la borne d'alimentation CC
Ⓜ Batterie de 12 volts
Ⓝ **Remarque:** Utiliser soit la batterie soit l'alimentation secteur, mais pas les deux ensemble.

① **Micrófono**
Podrá utilizarse un micrófono de baja impedancia o un micrófono de alta impedancia (de 500Ω a 50 kΩ). La llave PTT debe aislarse del circuito del micrófono (mostrado en |A|). Utilizar un micrófono con una llave y línea separadas para que pueda disponerse de PTT y VOX.

② **Auriculares**
Utilizar auriculares de 4 a 16Ω de impedancia. Los auriculares opcionales HS-5 o HS-6 son los más apropiados para utilizarlos con el TS-430S.
Los auriculares de tipo estereofónico también pueden utilizarse.

③ **Llave**
Para la operación CW, conectar la tecla a la toma KEY situada en el panel trasero. Utilizar un cable blindado.

④ **Conector para control remoto (REMOTE)**
Los accesorios externos pueden conectarse al TS-430S a través del conector REMOTE. El terminal PTT puede utilizarse para el control remoto de la operación de transmisión/recepción.

⑤ **Altavoz externo**
Además del altavoz incorporado también puede utilizarse un altavoz externo. Conectar el altavoz externo a la toma EXT SP utilizando el enchufe suministrado.

⑥ **Terminal de tierra (GND)**
Para evitar la posibilidad de descargas eléctricas, interferencias con la recepción de programas de radiodifusión e interferencias de la TV, se recomienda que el cable de tierra esté conectado al terminal GND situado en la parte posterior del aparato.

Ⓐ Operación a modo de estación fija
Ⓑ Pararrayos
Ⓒ Para la instalación de la antena de estación fija, ver la página 10.
Ⓓ Conector tipo UHF
Ⓔ Receptáculo para la antena
Ⓕ Operación a modo de estación móvil
Ⓖ A la salida de CA
Ⓗ Terminal de alimentación de CC
Ⓘ Negro-Gris
Ⓙ Rojo-Blanco
Ⓚ Fusible de 20A
Ⓛ Conectar la batería al terminal de alimentación de CC
Ⓜ Batería de 12V
Ⓝ **Nota:** Utilizar bien la batería o la alimentación regulada pero no ambos.

① **Microfono**
È possibile usare un microfono a bassa o a alta impedenza (da 500Ω a 50 kΩ). L'interruttore PTT deve rimanere separato dal circuito del microfono (illustrato in |A|). Usare un microfono con interruttore linea MIC separati, così da poter usufruire del PTT e del VOX.

② **Cuffia**
Usare una cuffia con un'impedenza di 4 a 6Ω. Le cuffie opzionali HS-5 e HS-6 sono l'ideale per l'uso con il TS-430S.
È pure possibile usare una cuffia stereo.

③ **Tasto**
Per l'uso a CW, collegare il tasto alla presa KEY sul retro. Usare un cavo schermato.

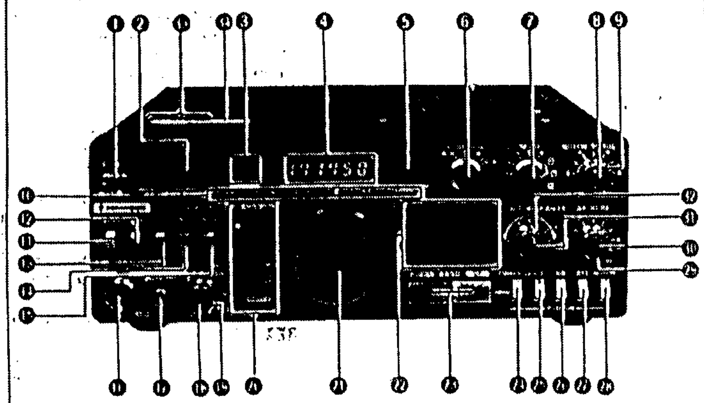
④ **Presa per collegamento a distanza (REMOTE)**
Gli accessori esterni possono essere collegati al TS-430S usando la presa REMOTE. Il terminale PTT può essere usato sia per il comando a distanza, come pure per la trasmissione/ricezione.

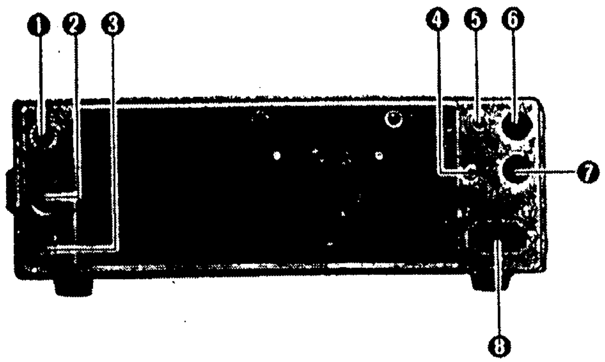
⑤ **Al toparlante esterno**
Benché l'apparecchio incorpori già un al toparlante, è possibile collegarne un altro, esterno. Usare la presa EXT SP, sul retro, collegandovi i cavi con lo spinotto in dotazione.

⑥ **Terminale di messa a terra (GND)**
Si consiglia di collegare un filo di messa a terra a questo terminale, sul pannello posteriore, per prevenire qualsiasi scarica elettrica, TVI e BCI. Usare un cavo il più corto e pesante possibile.

Ⓐ Uso come stazione fissa
Ⓑ Parafulmine
Ⓒ Per l'installazione dell'antenna per la stazione fissa, vedere a pagina 10
Ⓓ Connettore tipo UHF
Ⓔ Presa per antenna
Ⓕ Uso come stazione mobile
Ⓖ Alla presa di rete
Ⓗ Terminale alimentazione CC
Ⓘ Nero-grigio
Ⓙ Rosso-bianco
Ⓚ Fusibile 20A
Ⓛ Collegare la batteria al terminale CC
Ⓜ Batteria 12V
Ⓝ **Nota:** Usare la batteria o l'alimentazione di rete, ma non entrambe.

4 ● CONTROLS, INDICATORS AND CONNECTORS ● BEDIENUNGSELEMENTE, ANZEIGEN UND ANSCHLÜSSE ● COMMANDES, INDICATEURS ET CONNECTEURS ● CONTROLES, INDICADORES Y CONECTORES ● COMANDI, INDICATORI E PRESE





4.1 FRONT AND TOP PANELS (TS-430S shown)

① POWER switch
This switches the TS-430S ON and OFF.
Before operating the POWER switch, confirm that the VOX ⑫ is off, and the STANDBY switch ⑪ is set to the reception mode (REC).

② METER
The meter has three functions, two being selected by the METER switch. In receive, the meter is automatically an S-meter showing receive signal strength on a scale of 1 – 9, +20, +40 and +60 dB. In transmit, the meter shows IC or ALC level, depending on METER switch position.

③ VFO indicators
VFO A indicator lights when VFO A is operating. VFO B indicator lights when VFO B is operating.

④ Digital display
The digital display indicates true operating frequency in all modes to an accuracy of 100 Hz.

⑤ M.CH (Memory Channel) display
Indicates memory channel 1 – 8 or P, program scan.

⑥ FUNCTION switch
This selects the VFO which will control receive and transmit frequencies. Select position A or B for normal operation. A-R and B-R are used for split frequency or cross-band operation.
A-R: VFO A operates during reception and VFO B during transmission.
A: VFO A operated, VFO B stands by.
B: VFO B operates, VFO A stands by.
B-R: VFO B operates during reception and VFO A during transmission.

⑦ MEMORY CH selector
This selects one of the eight memory channels. To write in a frequency depress the M.IN switch and the displayed frequency will store in the selected channel. To recall from a memory channel, select the channel and depress the MR switch.

⑧ NOTCH control
Turn the NOTCH switch ㉘ ON to activate the notch filter. Adjust the notch frequency to null beat (carrier interference) signals.

⑨ SQUELCH control
The squelch control is used to eliminate noise during no signal time. This control may be adjusted clockwise until the noise disappears (threshold level). The control functions for all modes; SSB, AM and CW. In the FM mode, squelch functions only when the optional FM-430 is installed.

⑩ Indicators
ON AIR indicator: This lights during transmission mode. F.LOCK (Frequency lock): Lights when the F.LOCK switch ㉕ is ON, indicating the VFO operating frequency is locked.
F.STEP (Frequency step): Lights when the STEP switch ㉒ is ON, indicating a fast VFO tuning rate.
RIT (Receiver Incremental Tuning): Indicates the RIT switch ㉖ is ON.
NOTCH: Indicates the notch filter is operating and lights when the NOTCH switch ㉘ is ON.

⑪ STAND-BY switch
This switch selects:
REC: The transceiver is receiving unless the microphone PTT switch or the VOX circuit is activated.
SEND: Locks the unit in transmit. Transmission is locked out (reception only) if the selected transmission frequency is outside the amateur radio bands, or the final stage thermal-protects is deactivated due to excessive heat-sink temperature.

⑫ VOX switch
Turn this switch on to activate the VOX (Voice Operated Xmit) during SSB, AM or FM operation or to allow semi-break-in CW operation.

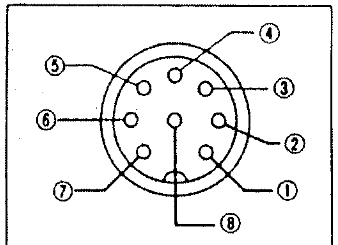
⑬ PROC (Speech processor) switch
This switch is used during SSB or AM operation. At switch ON, the speech processor will be activated, increasing average "talk power".

⑭ METER switch
During transmission, the meter switch determines meter function.
The switch selects between:
ALC – The meter monitors the output of the final stage power amplifier during transmission. During SSB operation, adjust the MIC control so that the meter pointer is within the ALC zone. Similarly, adjust the CAR control for CW operation. ALC does not indicate in the AM or FM mode.
IC – The meter monitors final stage collector current.
12 – 19A is normal, 17A typical.

⑮ NAR/WIDE switch
This switch selects receive IF bandwidths when optional filters are installed.
The WIDE position provides the same IF bandwidth for both CW and SSB. For the NARROW position, optional filters are available for both CW and SSB. In the AM mode, the SSB filter is on in the narrow position.

⑱ MIC (Microphone) connector (8-pin)

Microphone audio input. Frequency UP/DOWN control and PTT lines are included. The MC-42S or MC-60A microphones (optional) are recommended. MIC connector pin assignments are shown below.



FRONT VIEW

① MIC	⑥ NC
② STBY	⑦ GND MIC
③ DOWN	⑧ GND Connection (STBY)
④ UP	
⑤ 8V	

⑰ PHONES jack

The headphone jack allows use of 4 – 16 ohm (or greater) impedance headphones. HS-5 or HS-6 optional headphones provide optimum results. Stereo-type headphones can also be used. Headphones will disable the internal or external speaker.

⑯ MIC (Microphone gain) control

This control adjusts microphone amplifier gain for SSB and AM operation. In the SSB mode, adjust for an on-scale ALC reading at voice peaks. For low power operation, adjust this control below the ALC range.

⑲ CAR (CARRIER LEVEL) CONTROL

This controls carrier level during CW operation. Adjust the carrier level for an on-scale ALC meter reading. For low-power operation, adjust this control below the ALC range.

⑳ MODE switches and indicators

These switches are used to select the mode; USB, LSB, CW, AM or FM (optional). Each indicator lights corresponding to the mode.

㉑ Tuning Knob

This knob controls the dual digital VFO's which operate in 10 Hz step at 10 kHz turn for normal slow tuning, or with the STEP switch depressed, at 100 Hz step for fast tuning.

㉒ Keyboard

- A – B switch: Depress this switch to equalize the frequency and mode of the idle VFO to that of the operating VFO.
- LOCK switch: This electrically locks the VFO frequency. When this switch is on, the tuned frequency does not vary when either the tuning knob or BAND switch is operated. This is convenient when operating on the same frequency for extended periods. The RIT does operate with the LOCK switch on. The F.LOCK indicator lights to show operation.
- STEP switch: Used to select the VFO tuning rate.
- M.CH (Memory channel) switch: Used to select a memory channel as a fixed frequency. With this switch ON, the channel number is displayed on the M.CH display.
- MR (Memory recall) switch: Depress to recall a selected channel from memory to the VFO for tunable operation.
- M.IN (Memory in) switch: Depress to store the displayed VFO frequency into a selected memory channel.
- MS (Memory scan) switch
Depress this switch for memory scan operation.
Only channels with stored data are scanned. Scan rate is fixed at approximately 1.8 sec./channel.
- PG.S (Program scan) switch
Depress this switch to scan from the frequency stored in CH 6 to the frequer stored in CH ‾‾ ·o-gramm scan Speed is ,ustable. However, the presence of a signal does not stop the scan.
- HOLD (Scan hold) switch
Depress this switch to stop the scan operation. Resetting this switch to OFF resumes the scan operation.

㉓ BAND selector switches

Used to select the amateur or frequency band. When the UP or DOWN switch is pressed, the band changes by one step.

㉔ 1 MHz step switch

When depressed ON, this allows the band switch to raise or lower the frequency in 1 MHz steps within the transceivers full frequency range. At OFF (out) the Band switch steps the amateur band.

㉕ RIT switch

This push switch turns the RIT (Receiver Incremental Tuning) circuit ON and OFF. With the switch depressed, the circuit is activated and the RIT indicator is illuminated, allowing the receive frequency to be shifted by about 1 kHz independent of the transmit frequency by using the RIT control. The RIT circuit is turned OFF when the switch is out.

㉖ NB (Noise Blanker) switch

This switch is used to reduce pulsating type ignition noises usually emitted from motor vehicles. Power-line, QRM and atmospheric "white" noise will not operate the noise blanker.

㉗ RF ATT (Attenuator) switch

With this switch ON, a 20 dB attenuator is inserted in the antenna circuit, protecting the RF amplifier and mixer from overload on strong input signals.

㉘ NOTCH switch

This switch controls the NOTCH circuit and indicator.

㉙ RF GAIN control

This adjusts receiver RF amplifier gain. Turn fully clockwise for maximum gain and a correct S-meter reading.

㉚ AF GAIN (Audio Frequency) control

This control adjusts the receiver audio output level. Volume increases as the control is turned clockwise.

㉛ RIT control

When the RIT switch is ON, this will vary the receive frequency by about 1 kHz. When the control is set to the "0" center position, there is no frequency shift.

㉜ IF SHIFT control

By using this control, the IF crystal filter center frequency can be shifted about 1 kHz, allowing adjustment of tone quality, or eliminating interference from adjacent frequencies. For normal operation, this control should be set to the center "0" position.

㉝ VOX controls

VOX GAIN: This controls sensitivity of the VOX (Voice operated Transmit) circuit. Adjust the gain for consistent key-over by voice, but not back ground noise.
DELAY control: This controls hold time for VOX, or CW semi-break-in operation. Adjust to hold the transmitter on between words, at a normal speech and keying rate.
ANTI-VOX control
This control is used to adjust the VOX system so that it is not false-tripped by sound from the speaker.

㉞ PG.SCAN (Program scan) control

This adjusts program scan speed.

4.2 REAR PANEL

① ANT (Antenna) connector

This UHF connector should be attached to a suitable antenna for transmitting and receiving. The antenna cable should be 50-ohm coax, terminated with a PL-259 connector.

② X. VERTER (transverter) terminal

This 8 Pin DI' nnector is used to interface a VH.. or UHF transverter.

③ GND (Ground) terminal

To prevent electric shock, as well as RFI and BCI, connect the transceiver to a good earth ground.

④ CW key jack

Using shielded line, connect a key to this 1/4" phone jack for CW operation. Key open-terminal voltage is approximately 9V DC.

⑤ EXT. SP (External speaker) jack

The receiver audio output can be connected through this jack to an external 4 to 16 ohm speaker. The internal speaker is disconnected when an external speaker is connected.

⑥ REMOTE connector

This connector is used to interconnect a linear amplifier or other accessory item.

⑦ ACC (Accessory) connector

⑧ DC POWER CONNECTOR

This is used to connect the DC power supply.

○

4.1 Frontplatte und Gehäuse-Oberseite

① Netzschalter (POWER)

Zum Ein- und Ausschalten des Sendeempfangers.
Stellung ON (▄) – ein, Stellung OFF (⊓) – aus.
Vor Betätigung des Netzschalters unbedingt darauf achten, daß der VOX-Schalter ㉝ auf MAN und der Sende/Empfangs-Schalter ⑪ auf REC eingestellt ist.

② Mehrzweck-Meßinstrument

Dieses Instrument erfüllt drei Funktionen, von denen zwei mit dem Meßbereichs-Schalter 14 wählbar sind. Bei Empfangsbetrieb arbeitet das Instrument als S-Meter mit einem Anzeigebereich von S1-9, +20, +40 und +60 dB. Bei Sendebetrieb

5.1 RECEPTION

5.1.1 RECEPTION

First connect the antenna, microphone and key. Then set the controls and switches.

Acertain that the TS-430S is ready for operation, then tum the POWER switch ON. The meter and digital display will illuminate, indicating the transceiver is in operation. The transceiver is fully solid-state, allowing reception as soon as the POWER switch is switched ON.

Advance the AF GAIN control clockwise until some receiver noise is heard from the speaker. Turn the main tuning control so the desired signal can be heard clearly.

5.1.2 RF ATT SWITCH

The input to the receive RF amplifier is attenuated approximately 20 dB, providing distortion-free reception. This feature may be used in cases of receiver overload, caused either by a strong local signal, or during weak signal reception when a strong adjacent signal may blank the receiver.

5.1.3 NB SWITCH

The TS-430S has a sophisticated noise blanker designed to reduce ignition-type pulse noise. The noise blanker is particularly important for mobile operation. When necessary, activate the noise-blanker by depressing the NB switch ON.

5.1.4 RF GAIN CONTROL

For normal operation, this control should be turned fully clockwise for maximum sensitivity. Receive sensitivity is reduced by turning the control counterclockwise.

Adjust the RF GAIN so the S-meter does not show excessive deflection. This minimizes noise during reception and allows the S-meter to indicates signal peak (or a little below that point). Noise is markedly reduced when signal is absent.

5.1.5.1 SQUELCH

To eliminate receiver noise at the no-signal condition, slowly advance the squelch clockwise until the noise just disappears (threshold point).

The squelch will open and the speaker will operate when a signal is received. If the signal is weak or fades, readjust the squelch for consistent reception.

5.1.5.2 NOTCH CONTROL

If a single tone such as a CW signal is superimposed on the receive signal, turn the NOTCH ON and adjust the NOTCH control to eliminate or minimize the beat signal. A beat of approximately 900 Hz can be eliminated at the center position of the control. The NOTCH is effective between 350 and 2600 Hz.

5.1.6 RIT CONTROL

By using the RIT (Receiver Incremental Tuning) control, the receive frequency can be shifted by about ± 1 kHz without changing the transmit frequency.

If the frequency of the station you are working changes, your receive frequency can be reset by turning the RIT switch ON and adjusting the RIT control. Adjusting the control clockwise increases the frequency. When first calling another station, the RIT should be OFF, otherwise your transmit and receive frequency will not coincide.

5.1.7 IF SHIFT CONTROL

The IF SHIFT control is used to shift the passband of the IF filter without changing receive frequency. By turning this control in either direction, the IF passband is shifted as shown in Fig. 5-3.

The IF SHIFT is effective in eliminating interference when nearby signals are superimposed on the receive signal during either SSB or CW operation. IF SHIFT does not operate in the AM or FM modes.

(1) USB Mode (10 MHz and above)

Adjust the IF SHIFT control in the + directi[illegible] and lower freq[illegible]ncies are cut. [illegible]st the control [illegible]e – direction and high frequencies are cut.

(2) LSB Mode (7 MHz and below)

Adjust the control in the + direction and higher frequencies are cut. Adjust the control in the – direction and low frequencies are cut.

(3) CW Mode

By using the IF SHIFT in conjunction with the RIT, tone quality can be adjusted.

5.1.8 NAR-WIDE switch operation

For short to medium distance communication, the WIDE position may be used for both SSB and CW operation. For DX (long distance) communication, the NAR position will be an advantage in reducing interference. This feature, in combination with the IF SHIFT control, will provide outstanding interference rejection. The receive IF bandwidth is 2.4 kHz in the SSB and CW wide position, 270 or 500 Hz for CW (with optional filters YK-88CN or YK-88C) and 1.8 kHz for SSB (with optional filter YK-88SN), in the NAR position.

*In the AM MODE without an optional filter, both WIDE NARROW positions are 2.4 kHz. With a YK-88A Wide is 6 kHz, and Narrow is 2.4 kHz.

*In transmit bandwidth is automatically WIDE.

PASSBAND WIDTH (–6 dB) kHz

FILTER \ MODE	CW		SSB		AM	
	W	N	W	N	W	N
No optional filter	2.4	*	2.4	*	6	2.4
YK-88C or CN	2.4	500 or 270	–	–	6	2.4
YK-88SN	–	–	2.4	1.8	6	2.4
YK-88A	–	–	–	–	6	2.4

W = WIDE
N = NARROW

NOTE:

1. Without optional filters, there is no SSB or CW reception in the NAR switch position (*).
2. The NAR/WIDE switch does not function in the AM, FM mode.
3. Without an optional filter, the AM mode bandwidth is 2.4 kHz

5.2 TRANSMISSION

CAUTION:

Before transmitting, be sure to connect an antenna or dummy load with a VSWR of less than 1.5:1. Never attempt to transmit with the antenna terminal left open.

When testing the transmitter, use a 50-ohm dummy load, rated at greater than 100W (TS-430S). Refer to Fig. 5-1 for initial control settings. When the TS-430S is ready for transmission, use the following procedures:

5.2.1 SSB Operation

1. Set the MODE switch to SSB.
2. Meter switch to ALC.
3. Standby switch to SEND.
4. Speak into the microphone and adjust the MIC GAIN for meter deflection within the ALC zone at signal peaks.
5. For QRP (Low Power) operation, use less MIC GAIN and consult your external wattmeter for output level.

5.2.2 AM Operation

1. Set the MODE switch to AM and the meter switch to IC.
2. Place the STANDBY switch to SEND and adjust the CAR control so the meter registers approximately 2/3 its usual deflection.
3. Speak into the microphone and advance the MIC GAIN control so the meter deflects only slightly at peaks. Note that excessive meter deflection indicates overmodulation.
4. The PROC may be used to provide a more constant modulation level.

5.2.3 PROC (processor) operation

In DX (long distance) SSB or AM operation, it may be desirable to increased talk-power by using the speech processor.

The speech processor in the TS-430S combines an audio compression amplifier with changes in ALC time c[illegible]ant to provide extra audio punc[illegible]nd increases average SSB output power, while suppressing sideband splatter. To activate, turn on the PROC switch, and readjust MIC gain. Operated as described, distortion will be minimal. However, tone quality will be affected. It is therefore advisable to conduct normal operation with the processor disabled.

NOTE:

When a high-output microphone is used, input overload and distortion may result.

To prevent this, use an attenuator in the microphone circuit as shown below, or connect a 10 – 33kΩ resistor (depending on the microphone used) across the microphone input. (Mic control setting should be approximately 12 o'clock)

The MC-60A microphone is recommended (Microphone sensitivity: –55 ±3dB for approx. 5 cm distance to the mic). The MC-60A MIC AMP Switch should be set at the OUT position.

5.2.4 CW Operation

1. Set the MODE switch to CW and the meter switch to ALC.
2. Set the standby switch to SEND and adjust the CAR control so the meter deflects within the ALC zone. If a key is connected, it should be depressed during the adjustment.
3. For QRP operation, adjust the Carrier Control below the ALC point.

NOTE:

Full power operation (more than 5 minutes at ambient temperature of 25°C, in case of 10 MHz band, more than 30 seconds because of final efficiency), with the key kept depressed may result in unit trouble. At this time, pay attention to installation condition as well as ambient temperature, and decrease the power or operate the unit after an interval.

5.2.5 FM Operation (With FM-430 FM unit Installed)

5

1. Place the MODE switch to FM.
2. Place the STANDBY switch to SEND.
3. Speak into the microphone. (In the FM mode, the MIC GAIN, CAR and meter switches are not used.)

5.2.6 FINAL STAGE PROTECTION

The TS-430S features a VSWR protection circuit to protect the final-amplifier transistors.
Three different protection circuits are used.
1. The final-stage transistors are protected by detecting VSWR of the antenna system and automatically lowering transmitter output power if the VSWR is too high.
2. When the heat-sink temperature rises, a detection circuit activates a cooling fan. Under normal conditions, this cooling fan sufficiently cools the heat sink.
3. The heat-sink temperature could rise abnormally during long transmissions, if the area adjacent to the heat-sink is blocked. In this case, the transmission is inhibited until the heat-sink cools to the proper temperature.

NOTES:
1. If transmitter output decreases due to activation of the protection circuit caused by high VSWR, carefully recheck and retune the antenna system.
2. When the cooling fan starts to operate, determine that adequate air flow is possible in the heat-sink area.

● Operation of the Cooling Fan
The cooling fan operates when the heat-sink temperature rises to approximately 50°C (122°F) and ceases to operate when the temperature decreases to normal, approximately 40°C (104°F). The heat-sink is made of die-cast aluminum and is actually the rear panel. It must be kept clear of surrounding objects to allow heat to dissipate easily.
The cooling fan is designed to operate when the heat-sink temperature is at a specific level, regardless of whether the unit is in transmit or receive mode.

5.2.7 MIC GAIN CONTROL

This control adjusts the microphone input level. When using the TS-430S in a voice mode, connect a microphone and set the STANDBY switch to SEND (an antenna or dummy load must be connected).
For SSB operation, set the meter switch to ALC and speak into the microphone. Adjust the MIC GAIN control so the meter does not deflect out of the ALC zone at signal peaks.
The TS-430S accepts either a low or high impedance microphone (500 Ω to 50 kΩ). When using a low impedance microphone (500 Ω) the MIC GAIN control should be advanced slightly higher than when a high impedance microphone is used, while observing the ALC meter.

● ALC (Automatic Level Control)
The ALC monitors the transmitter final stage output to minimize distortion in your transmitted signal. It automatically adjusts output to an optimum level.

5.3 VOX OPERATION

5.3.1 VOX SWITCH

VOX (voice operated transmit) is used to switch the TS-430S into transmit mode by your voice. Place the VOX switch ON and speak into the microphone. The transceiver automatically switches to transmit mode. Both the SEND switch and the MIC PTT switch are left in the REC position.

5.3.2 VOX GAIN CONTROL

This adjusts the VOX circuit sensitivity. Speak into the microphone at a normal voice level and adjust the control. Increased sensitivity allows transmission with a lower voice level. Transceiver operating condition (r ve or transm n be checked b e ON AIR LEL
Note that if the control is advanced too far, the VOX circuit may be "tripped" by ambient noise.

5.3.3 ANTI-VOX CONTROL

This prevents the VOX circuit from being false-tripped by sound from the speaker.
Adjust the control so the VOX will not operate at the desired speaker volume level.

5.3.4 VOX DELAY CONTROL

This control adjusts the VOX circuit transmit hold time. If the hold time is too short, the transceiver will return to receive mode as soon as you stop talking into the microphone. This can be eliminated by advancing the control. Adjust the control for comfortable operation at a normal rate of speech.

5.4 SEMI-BREAK-IN OPERATION

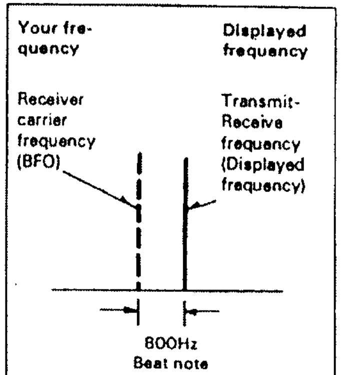
The TS-430S has a built-in side-tone oscillator which, used in conjunction with the VOX circuit, allows semi-break-in operation, besides the conventional (SEND switch controlled) CW operation. During semi-break-in operation, the transceiver is placed in transmit mode when the key is depressed, and returns to receive mode when the key is released. The VOX circuit is activated by the side-tone.
For semi-break-in operation, set the VOX switch ON and the MODE switch to CW. Adjust the VOX GAIN to insure that the transceiver is set in transmit mode whenever the key is depressed. Also, adjust the VOX DELAY for the desired hold time.
ANTI VOX adjustment is not required.

5.5 OPERATION WITH A LINEAR AMPLIFIER

The remote connector on the rear panel provides for interconnection with an amplifier. See the amplifier instruction manual to determine whether the linear requires a nor ly opened or normally closed (du g receive) relay contact. Connect the amplifier control line to either pin 5 (N.C.) or pin 4 (N.O. during receive).
Connect the Ground (Shield) of the Control Line to Pin 2. Connect amplifier ALC to pin 6 of the remote connector. The TS-430S output is quite adequate to drive most amplifiers to full rated output.

5.6 CW OPERATION

For CW operation, your transmit frequency should be "zero-beat" to the transmit frequency of the station you are contacting. This also allows your contact to receive your signal without having to retune his receiver.
Tuning methods are detailed in the following paragraphs.



Tuning for CW Operation

NOTE:
1. In CW mode, transmit frequency is displayed when both transmitting or receiving.
2. During CW operation, operating the BAND switch differs from other modes; for example, pressing the UP (BAND) switch at display frequency 14,000.0 shows as follows.
14,000.0 → 14,500.0 → 18,500.0 ....→UP
10,500.0 ← 14,500.0 DOWN

5.6.1 ' RATION WITHOUT AN OPTIO. .L CW FILTER

Set the IF SHIFT control to its cente position and the RIT switch OFF. Adjust the main tuning control for an 800-Hz beat note and your transmit frequency will then coincide with tha of your contact station ("zero-beat"). During reception, the side-tone monitor is activated by pressing down the key (VOX OFF). In this case, listen to the side-tone superimposed on the receive signal and adjust the main tuning for similar side-tone and incoming CW audio tone. By so doing transmit frequencies will coincide. You may now adjust the RIT for a pitch which suits your preference. If interference is encountered, adjust the IF SHIFT. For more convenient and effective CW operation, use of the optional YK-88C or YK-88CN CW crystal filter is recommended.

5.6.2 OPERATION WITH A CW FILTER

Set the IF SHIFT to its center position and the RIT to OFF. Adjust the main tuning control for maximum deflection of the S-meter. Receive signal pitch will be about 800 Hz, indicating correct tuning.

5.6.3 KEY CONNECTION

When using an electronic keyer, make sure that polarity is set for positive. Always use shielded line from the key to transceiver.

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5.1 EMPFANGSBETRIEB

5.1.1 Empfang

Zunächst die Antenne, das Mikrofon, und die Morsetaste anschließen. Dann die Regler und Schalter gemäß Fig. 5-1 in die vorgeschriebenen Stellungen bringen.
Nach erfolgter Grundeinstellung und nochmaliger Kontrolle aller Anschlüsse den Netzschalter (POWER) bis zum Einrasten drücken (Stellung ON ⌴).
Die Skalenlampen des Meßinstru-

5.6.1 Uso senza filtro opzionale CW

Portare il comando IF SHIFT in posizione centrale e l'interruttore RIT in posizione OFF. Regolare il comando principale di sintonizzazione per una nota di battimento di 800 Hz; la frequenza di trasmissione viene così a coincidere con quella dalla stazione contattata (batimento zero). Durante la ricezione, il controllo dell'effetto locale viene attivato premendo il tasto (VOX su OFF). In questo caso, ascoltare l'effetto locale superimposto al segnale e regolare la sintonizzazione principale per l'effetto locale e il tono audio CW in ingresso. Così facendo, le frequenze di trasmissione vengono a coincidere.

Regolare ora il RIT a piacimento. Se si incontrano ancora delle interferenze, regolare il comando IF SHIFT. Per un funzionamento CW ancora più comodo ed efficace, si consiglia di usare il filtro opzionale di cristallo YK-88C o YK-88CN.

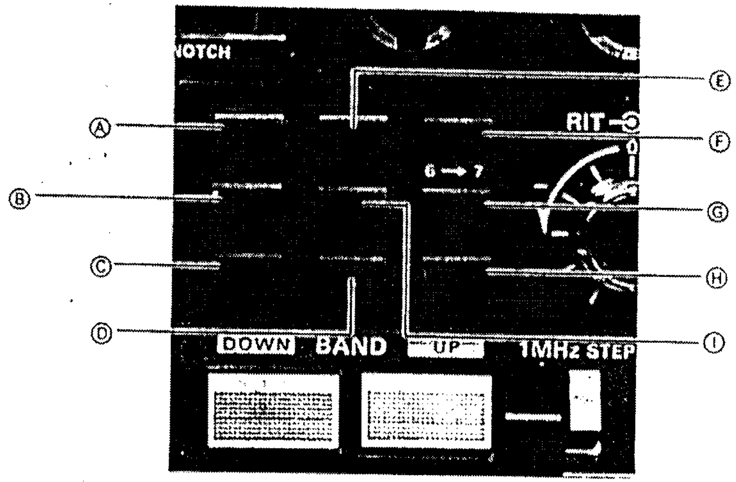
5.6.2 Uso del filtro CW

Portare il comando IF SHIFT in posizione centrale e il comando RIT in posizione OFF. Regolare il comando principale di sintonizzazione in modo da ottenere la massima deflessione dell'ago dell'indicatore dell'intensità del segnale (S). L'altezza del segnale ricevuto sarà di circa 800 Hz, il che corrisponde ad una sintonizzazione corretta.

5.8.3 Collegamento del tasto

Usando un tasto elettronico, controllare che la polarità sia regolata sul positivo. Usare sempre un cavo schermato per collegare il tasto alla ricetrasmittente.

5.7 KEYBOARD FUNCTIONS/FUNKTIONEN DER SCHALTER UND TASTEN IM TASTENFELD/ FONCTION DU CLAVIER/FUNCION DEL TECLADO/TASTIERA



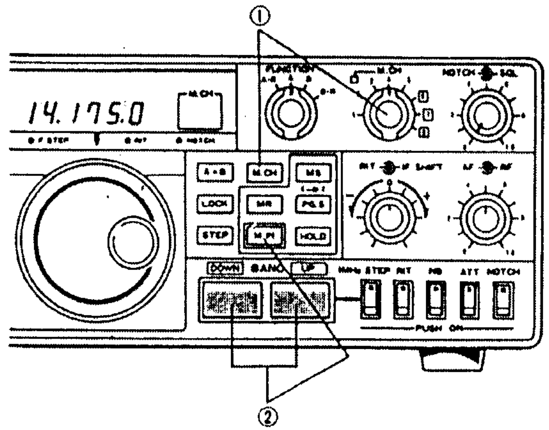
Ⓐ Brings the idle VFO frequency and mode to that of the active VFO.
Ⓑ Locks the operating frequency.
Ⓒ Switches to RAPID frequency step for VFO step tuning or program scanning. Step is 10 Hz in the normal position, and 100 Hz in the ON position.
Ⓓ Inputs both frequency and mode into a selected memory channel (CH's 1-8).
Ⓔ Depress to recall a memory channel. Select the channel with the M.CH switch.
Ⓕ Depress to scan the memory channels.
Ⓖ Scans the range between CH 6 frequency and CH 7 frequency.
Ⓗ Holds scan. During program scan hold, frequency can be tuned with the VFO control and the mode can be switched.
Ⓘ When this switch is depressed, the channel selected by the M.CH switch is recalled to the VFO for tunable operation. The mode can also be controlled when recalled by the MR switch.

Ⓐ Synchronisiert Frequenz und Betriebsart des nicht benutzten VFOs mit der des aktivierten VFOs.
Ⓑ Verriegelt die Betriebsfrequenz.
Ⓒ Dient zur Änderung des VFO-Frequenzrasters.
Taste lausgelöst: 10 Hz-Raster
Taste gedrückt: 100 Hz-Raster
Ⓓ Eingabe von Frequenz und Betriebsart in einen gewählten Speicherkanal (Kanal 1 bis 8).
Ⓔ Zum Abrufen eines Speicherkanals drücken. Den Kanal mit dem M.CH-Schalter wählen.
Ⓕ Zum Absuchen der Speicherkanäle drücken.
Ⓖ Absuchen des Bereichs zwischen der Frequenz von Kanal 6 und der Frequenz von Kanal 7.
Ⓗ Zum Anhalten des Suchlaufs. Nach dem Anhalten des programmierbaren Suchlaufs läßt sich die Betriebs-frequenz wieder am VFO einstellen und die Betriebsart umschalten.
Ⓘ Wenn dieser Schalter gedrückt wird, wird der mit dem M.CH-Schalter gewählte Kanal zur Abstimmung in den VFO gegeben. Es wird gleichzeitig auch die gespeicherte Betriebsart, welche geändert werden kann, mit abgerufen.

Ⓐ Mène la fréquence VFO déwattée et le mode sur ceux du VFO en service.
Ⓑ Verrouille la fréquence de fonctionnement.
Ⓒ Commute sur un gradin de fréquence rapide (RAPID) pour l'accord par gradins du VFO ou le balayage du programme. Sur la position normale, le gradin est de 10 Hz, et de 100 Hz sur la position ON.
Ⓓ Introduit la fréquence et le mode dans une mémoire de canal sélectionné (CH 1 à 8).
Ⓔ Appuyer pour rappeler une mémoire de canal. Sélectionner le canal avec la touche M.CH.
Ⓕ Appuyer pour balayer la mémoire des canaux.
Ⓖ Balaye la gamme entre la fréquence du CH 6 et celle du CH 7.
Ⓗ Maintien le balayage. Durant le maintien du balayage de programme, on peut accorder la fréquence avec la commande VFO et le mode peut être commuté.
Ⓘ Lorsque cette touche est enclenchée, le canal sélectionné par la touche M.CH est rappelé vers la VFO pour l'opération d'accord. Le mode peut également être commandé lorsqu'il est rappelé par la touche MR.

Ⓐ Pone la frecuencia y el modo del VFO en reposo en los del VFO activo.
Ⓑ Bloquea la frecuencia de operación.
Ⓒ Conmuta al paso de frecuencia rápida para la sintonización por pasos del VFO o la exploración de programas. El paso es de 10 Hz en la posición normal y de 100 Hz en la posición ON.
Ⓓ Da entrada a la frecuencia y el modo en el canal de memoria seleccionado (canal 1 al 8).
Ⓔ Presionar para llamar un canal de memoria. Seleccionar el canal con la llave M.CH.
Ⓕ Presionar para explorar los canales de memoria.
Ⓖ Explora la gama entre la frecuencia del canal 6 y la frecuencia del canal 7.
Ⓗ Retiene la exploración. Durante la retención de exploración de programas, la frecuencia puede sintonizarse con el control VFO y el modo puede conmutarse.
Ⓘ Cuando está presionada esta llave, el canal seleccionado por la llave M.CH se aplica al VFO para la operación de sintonización. El modo puede controlarse también al llamarlo con la llave MR.

Ⓐ Uguaglia la frequenza e il modo del VFO non attivo alla frequenza e al modo di quello attivo.
Ⓑ Blocca la frequenze in uso.
Ⓒ Attiva il modo rapido di sintonizzazione a scaglioni VFO o di scansione del programma. Gli scaglioni sono di 10 Hz usando la posizione normale e di 100 Hz usando la posizione ON.
Ⓓ Immette la frequenza e il modo nel canale di memorizzazione slezionato (CH 1-8).
Ⓔ Premere per richiamare una memorizzazione. Selezionare il canale per mezzo dell'interruttore M.CH.
Ⓕ Premere per scandire i canali di memorizzazione.
Ⓖ Scandisce la gamma di frequenza tra il canale 6 e 7.
Ⓗ Ferma la scansione. Durante il fermo scansione del programma, la frequenza può essere sintonizzata con il comando VFO ed è possibile commutare il modo.
Ⓘ Premendo questo interruttore, si richiama nel VFO il canale selezionato per mezzo dell'interruttore M.CH, per la sintonizzazione. Il modo può essere regolato anche dopo il richiamo per mezzo dell'interruttore MR.



① Depress the M.CH switch, and place the M.CH switch to the unwanted memory channel.
② Simultaneously depress the BAND switch, and the M.IN switch.

① Den M.CH-Schalter drücken und den M.CH-Schalter auf den nicht gewünschten Speicherkanal stellen.
② Den BAND-Schalter und den M.IN-Schalter gleichzeitig drücken.

① Appuyer sur la touche M.CH, puis placer le sélecteur de mémoire de canal sur celle qui est à effacer.
② Appuyer simultanément sur le commutateur de gamme d'ondes (BAND) et sur la touche M.CH.

① Presionar la llave M.CH y ponerla en el canal de memoria indeseado.
② Presionar simultáneamente la llave M.CH y la llave M.IN.

① Premere l'interruttore M.CH e portare il comando M.CH sul canale il cui contenuto deve essere cancellato.
② Premere l'interruttore di banda e M.IN contemporaneamente.

● Erasing an unwanted frequency from memory

Unwanted memory content can be erased.

1. Depress the M.CH switch, and select the channel to be erased with the M.CH switch.
2. Simultaneously depress the BAND switch (either UP or DOWN), and the M.IN switch.
3. The display will clear, and only the decimal points will display. All mode indicators will remain off.

● Löschen gespeicherter Festkanal-Frequenzen

Die in einem Speicherkanal gespeicherte, nicht mehr gewünschte Frequenz wird wie folgt gelöscht:

1. Schalter M. CH. drücken und den zu löschenden Kanal mit dem Kanal-Schalter (M. CH.) anwählen.
2. Die Tasten BAND (UP oder DOWN) und M. IN gleichzeitig drükken.
3. Die Digitalanzeige wird bis auf die Dezimalpunkte gelöscht. Die Betriebs-
arten-Leuchtanzeige bleibt dunkel.

● Effacement d'une fréquence superflue de la mémoire

Le contenu superflu de la mémoire peut être effacé.

1. Appuyer sur la touche M. CH (mémoire de canal) puis sélectionner le canal devant être effacé avec cette même touche.
2. Appuyer simultanément sur le commutateur de gamma d'ondes (BAND, UP ou DOWN) et sur la touche M. IN (entrée de mémoire).
3. L'affichage est alors effacé, et seuls les points décimaux restent à l'affichage. Tous les indicateurs de mode restent éteints.

● Borrado de una frecuencia indeseada de la memoria

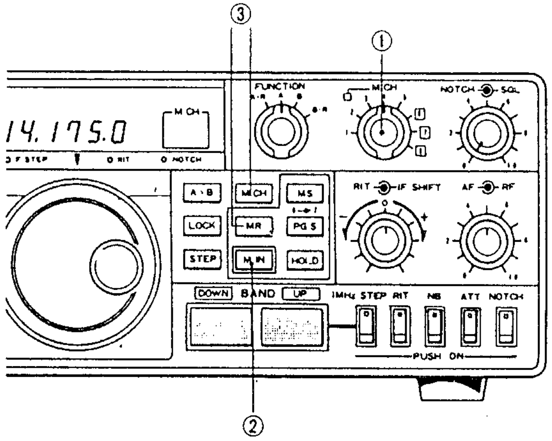
Los contenidos de la memoria que no se dessen pueden borrarse.

1. Presionar la llave M.CH y seleccionar el canal que quiera borrarse con la llave M.CH.
2. Presionar simultáneamente la llava BAND (bien UP o DOWN) y la llave M.IN.
3. La indicación se borrará y solamente quedarán indicados los puntos decimales. Todos los indicadores de modo permanecen apagados.

● Cancellazione di una memorizzazione

Per cancellare una memorizzazione, procedere come segue:

1. Premere l'interruttore M. CH e selezionare il canale di memorizzazione di cui si vuole cancellare il contenuto per mezzo dell'altro comando M. CH.
2. Premere l'nterruttore BAND (UP o DOWN) e l'interruttore M. IN contemporaneamente.
3. La visualizzazione del quadrante viene cancellata, lasciando solo il simbolo della virgola. Tutti gli indicatori del modo rimangono spenti.



① Select a memory channel.
② Store the memory.
③ These switches are for recalling memory.

① Einen Speicherkanal wählen.
② Speichern.
③ Diese Schalter dienen zum Abrufen der Speicherung.

① Sélectionner une mémoire de canal.
② Mise en mémoire.
③ Ces touches servent à rappeler la mémoire.

① Seleccionar un canal de memoria.
② Almacenar la memoria.
③ Estas llaves son para llamar la memoria.

① Selezionare un canale di memorizzazione.
② Premere per memorizzare.
③ Usare questi interrutori per richiamare la memoria.

● M.CH (Memory channel) operation

The TS-430S has eight memory channels. The memory permits input of both frequency and mode, and this data will be permanently retained (by the built-in lithium battery).

1. The M.CH switch selects the desired channel from CH 1-8.
2. When the M.IN switch is depressed, a "beep" sounds, indicating memory input.
3. There are two recall modes for memory channel contents.

* Depress the M.CH switch. Any one of eight channels can be selected by the M.CH switch as a fixed (non-tunable) frequency and mode.
* Depress the MR switch. The channel designated by the M.CH switch is recalled to the VFO for tunable operation. The memory contents are not changed.

● Festfrequenzbetrieb

Der TS-430S verfügt über acht Speicherplätze, die sog.
Speicher- oder Fest-Kanäle, in denen nicht nur die Betriebsfrequenzen, sondern auch die Betriebsart gespeichert werden können. Die eingebaute Lithium-Langzeitbatterie dient zur Speicherhaltung und verhindert ein Löschen der gespeicherten Informationen.

1. Den gewünschten Speicherkanal (1-8) mit dem Kanal-Drehschalter (M. CH.) vorwählen.
2. Bei Betätigung der Eingabe-Taste (M. IN) ertönt ein Pfeifton mit dem die Eingabe der Frequenz und Betriebsart quittiert wird.
3. Die in den Festkanälen gespeicherten Informationen lassen sich wie folgt abrufen:

* Schalter M. CH. drücken. Jeder der acht Speicherkanäle läßt sich mit dem Kanal-Drehschalter (M. CH.) als Festfrequenzkanal mit vorgegebener Betriebsart abrufen.
* Taste MR drücken. Der mit dem Kanal-Drehschalter (M. CH.) vorgewählte Kanal wird zur Feinabstimmung auf den VFO übertragen, der Speicherinha[illegible]ibt jedoch e[illegible]en.

● Fonctionnement de la mémoire de canal (M. CH)

Le TS-430S comporte huit mémoires de canaux. La mémoire permet d'introduire la fréquence et le mode, et ces données restent enregistrées de manière permanente (grâce à la pile aulithium intégrée).

1. Le sélecteur M. CH permet de sélectionner le canal choisi parmi les huit existants.
2. Lorsque la touche d'entrée de mémoire (M. IN) est enclenchée, un "bip" résonne, ce qui indique la mise en mémoire.
3. Il y a deux modes de rappel pour le contenu des mémoires de canal.

* Appuyer sur la touche M. CH. On peut sélectionner n'importe lequel des huit canaux à l'aide du sélecteur M. CH en tant que fréquence fixe (non accordable) et mode.
* Appuyer sur la touche MR (mémoire). Le canal choisi par le sélecteur M. CH est rappelé vers le VFO pour l'opération d'accord. Le contenu de la mémoire ne change pas.

● Operación del canal de memoria (M.CH)

El TS-430S tiene ocho canales de memoria. La memoria permite la entrada de frecuencia y modo, y estos datos se retendrán permanentemente gracias a una pila de litio incorporada.

1. La llave M.CH selecciona el canal deseado desde CH1 a CH8.
2. Cuando se presione la llave M.IN, se oirá un sonido que indicará la entrada en memoria.
3. Hay dos modos de llamada de los contenidos del canal de memoria.

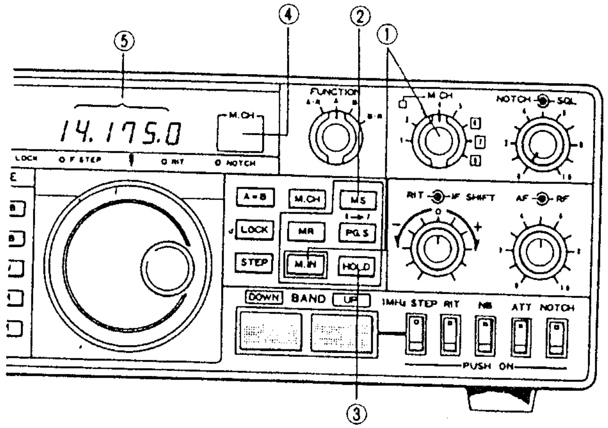
* Presionar la llave M.CH. Cualquiera de los ocho canales podrá seleccionarse con la llave M.CH, como frecuencia fija (no puede sintonizarse) y modo.
* Presionar la llave MR. El canal designado por la llave M.CH se llama al VFO para efectuar la operación sintonizable. Los contenidos de la memoria no se cambian.

● Uso dei canali di memorizzazione (M. CH)

Il TS-430S è dotato di otto canali di memorizzazione. È possibile memorizzare la frequenza e il modo; questi dati vengono conservati da una batteria al litio incorporata.

1. Usare l'interruttore M. CH per selezionare un canale di memorizzazione, da CH 1 a 8.
2. Premendo l'interruttore M. IN, si sente un bip, a riconferma dell'avvenuta memorizzazione.
3. Il contenuto di un canale di memorizzazione può essere richiamato in due modi:

* Premere l'interruttore M. CH. Si può così selezionare uno qualsiasi degli otto canali, per mezzo dell'interruttore M. CH. La frequenza e il modo richiamati sono fissi (e cioè non sintonizzabili).
* Premere l'interruttore MR. Il canale designato dall'interruttore M. CH viene richiamato al VFO e può essere sintonizzato. Il contenuto della memoria non viene comunque modificato.



① Stores frequency and mode.
② Depress to initiate memory scan.
③ Depress when desired traffic is received. Release to resume scan.
④ Displays the memory channel.
⑤ Displays the stored frequency.

① Speicherung der Frequenz und Betriebsart.
② Drücken, um den Speichersuchlauf zu starten.
③ Drücken, wenn das gewünschte Signal empfangen wird.
④ Anzeige des Speicherkanals.
⑤ Anzeige der gespeicherten Frequenz.

① Met en mémoire la fréquence et le mode.
② Appuyer pour mettre en marche le balayage de mémoire.
③ Appuyer lorsque la circulation voulue est reçue. Libérer pour reprendre le balayage.
④ Affiche le canal de la mémoire.
⑤ Affiche la fréquence mise en mémoire.

① Almacena la frecuencia y el modo.
② Presionar para iniciar la exploración de la memoria.
③ Presionarla cuando se reciba el tráfico deseado. Liberarla para renudar la exploración.
④ Indica el canal de memoria.
⑤ Indica la frecuencia almacenada.

① Memorizza la frequenza e il modo.
② Premere per dare inizio alla scansione della memoria.
③ Premere quando si incontra la combinazione frequenza/modo desiderata. Liberare per continuare la scansione.
④ Visualizza il canale di memorizzazione.
⑤ Visualizza la frequenza memorizzata.

● **Memory scan operation**

1. Input frequencies and modes to be scanned into the memory channels.
2. Depress the MS switch. The channel number and frequency of each occupied channel is displayed. Scan interval is approximately 1.8 seconds per channel.
3. When the desired traffic is received during scan, depress the HOLD switch.
4. Scan will resume by releasing the HOLD switch.

NOTES:

1. The channel eight transmit frequency is not scanned.
2. When memories are empty, [7] is displayed and there is no scan.
3. Scan is held by transmitting, and resumes when the transceiver returns to the receive mode.

● **Kanal-Suchlauf**

1. Gewünschte Frequenz und Betriebsart in den vorgewählten Speicherkanal eingeben.
2. Den Speicherkanal-Suchlauf-Schalter (MS) drücken. Die Nummern der belegten Speicherkanäle und die darin gespeicherten Frequenzen werden angezeigt. Die Suchlaufgeschwindigkeit beträgt etwa 1,8 Sekunden pro Kanal.
3. Wird das gewünschte Signal beim Suchlauf empfangen, den Anhalte-Schalter (HOLD) drücken.
4. Durch Auslösen des Anhalte-Schalters (HOLD) wird der Suchlauf fortgesetzt.

HINWEISE:

1. Die im Festkanal 8 gespeicherte Sendefrequenz wird nicht vom Suchlauf erfaßt.
2. Bei nicht belegten Festkanälen erscheint das Symbol/ auf der Anzeige. Speicherkanal-Suchlauf ist dann nicht möglich.
3. Der Suchlauf wird beim Übergang auf Sendebetrieb automatisch abgebrochen und beim Umschalten auf Empfangsbetrieb fortgesetzt.

● **Balayage de mémoire**

1. Introduire les fréquences et les modes devant être balayés dans les mémoires des canaux.
2. Appuyer sur la touche MS (balayage de mémoire).
Le numéro de canal et la fréquence de chaque canal occupé est affiché. L'intervalle de balayage est d'environ 1,8 seconde par canal.
3. Lorsque la circulation voulue est reçue durant le balayage, appuyer sur la touche de maintien (HOLD).
4. Le balayage reprend lorsqu'on libère la touche HOLD.

REMARQUES:

1. La fréquence de transmission du canal huit n'est pas balayée.
2. Lorsque les mémoires ne sont pas occupées, le signe [7] est affiché et il ne se produit aucun balayage.
3. Le balayage est suspendu lors de la transmission, et reprend lorsque l'émetteur-récepteur revient sur le mode de réception.

● **Operación de exploración de la memoria**

1. Dar entrada a las frecuencias y modos, que han de ser explorados, en los canales de memoria.
2. Presionar la llave MS. El número de canal y la frecuencia de cada canal ocupado quedarán indicados. El intervalo de exploración es de aproximadamente 1,8 segundos.
3. Cuando se reciba el tráfico deseado durante la exploración, presionar la llave HOLD.
4. La exploración se reanudará al liberar la llave HOLD.

NOTAS:

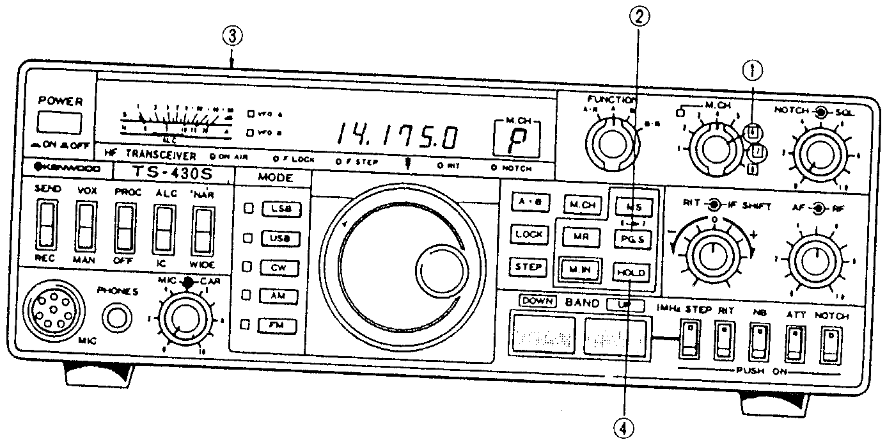
1. La frecuencia de transmisión del canal ocho no se explora.
2. Cuando las memorias estén vacías, se indica [7] y no hay exploración.
3. La transmisión retiene la exploración, y ésta se reanuda cuando el transceptor vuelva al modo de recepción.

● **Scansione della memoria**

1. Impostare le frequenze e i modi da scandire nei canali di memorizzazione.
2. Premere l'interruttore MS. Vengono così visualizzati il numero del canale e la frequenza di ogni canale di memorizzazione occupato. Il tempo di scansione è di circa 1,8 secondi per canale.
3. Quando, durante la scansione, si arriva sulla stazione desiderata, premere l'interruttore di sospensione della scansione (HOLD).
4. Liberando l'interruttore HOLD, la scansione continua.

NOTE:

1. La frequenza di trasmissione del canale 8 non viene scandita.
2. Quando un canale di memorizzazione è vuoto, nel quadrante viene visualizzato [7].
3. La scansione viene sospesa anche durante la trasmissione; essa riprende quando si ritorna al modo di ricezione.



① Input the lower frequency limit and mode into "6" and the upper frequency limit into "7".
② When depressed, the letter [P] displays and scan begins.
③ This control varies the scan speed (on top cover).
④ Depress to hold a frequency. Turn off to continue scanning.

① Die untere Grenzfrequenz und die Betriebsart in „6" eingeben und die obere Grenzfrequenz in „7".
② Nach Drücken wird der Buchstabe [P] angezeigt und der Suchlauf beginnt.
③ Dieser Regler (oben auf dem Gerät) verändert die Suchlauf-Geschwindigkeit.
④ Drücken, um den Suchlauf anzuhalten. Auslösen, um den Suchlauf fortzusetzen.

① Introduire la limite de la fréquence inférieure et le mode dans le canal 6 et la limite de la fréquence supérieure dans le canal "7".
② Lorsque cette touche est enclenchée, la lettre [P] est affichée et le balayage commence.
③ Cette commande permet de varier la vitesse de balayage (sur la façade supérieure).
④ Appuyer pour suspendre une fréquence. Désenclencher pour reprendre le balayage.

① Dar entrada al límite de frecuencia inferior y al modo en "6" y el límite de frecuencia superior en "7".
② Cuando esté presionada, la letra ([P]) se indica y se inicia la exploración.
③ Este control varía la velocidad de exploración (está situado en la tapa superior).
④ Presionar para retener una frecuencia. Liberarlo para continuar la exploración.

① Immagazzinare il limite inferiore della frequenza ed il modo nel canale 6 e il limite superiore nel canale 7.
② Premendo questo interruttore, nel quadrante appare [P] e la scansione inizia.
③ Usare questo comando (sul pannello superiore) per regolare la velocità di scansione.
④ Premere per fermare una frequenza. Liberare per continuare la scansione.

● Program scan operation

1. Program the scanning frequency range.
2. Input the lower (or upper) frequency limit and mode into CH 6 (using the M.IN switch). Then, input the upper (or lower) frequency limit into CH7.
3. Depress the PG.S switch to initiate scan. The letter P will display during program scan.

● Programmierbarer Suchlauf

1. Zunächst den gewünschten Suchlaufbereich vorprogrammieren.
2. Die untere (oder obere) Grenzfrequenz des Suchlaufbereichs im Kanal 6 mit der Eingabetaste (M. IN) speichern, dann die obere (oder untere) Grenzfrequenz im Kanal 7 speichern.
3. Zur Auslösung des Suchlaufs den Schalter PG. S. drücken.
Während des Suchlaufs erscheint auf der Kanal-Anzeige (M. CH.) der Buchstabe P.

● Balayage de programme

1. Programmer la gamme de fréquence de balayage.
2. Introduire la limite de la fréquence inférieure (ou supérieure) et le mode dans le CH 6 (à l'aide de la touche M. IN). Introduire ensuite la limite de la fréquence supérieure (ou inférieure) dans le CH 7.
3. Apuyer sur la touche PG. S (balayage de programme) pour commencer le balayage. La lettre P est affichée durant le balayage de programme.

● Operación de exploración de programas

1. Programar la gama de frecuencias de exploración.
2. Dar entrada al límite de frecuencia inferior (o superior) y al modo en el CH 6 (utilizando la llave M.IN). Luego, dar entrada al límite de frecuencia superior (o inferior) en el CH 7.
3. Presionar la llave PG.S para iniciar la exploración. Durante la exploración de programas quedará indicada la letra P.

● Scansione del programma

1. Programmare la gamma di frequenza da scandire.
2. Impostare il limite inferiore (o superiore) della frequenza e il modo nel canale 6 (CH 6), facendo uso dell'interuttore M. IN. Impostare quindi il limite superiore (o inferiore) nel canale 7.
3. Premere l'interruttore PG.S per dare inizio alla scansione. Durante la scansione del programma, nel quadrante appare la lettera P.

4. The scan speed is adjustable using the speed control on the top panel, along with the STEP switch. Select the scan speed appropriate for the selected frequency and mode.
5. When the desired station is received and that frequency is to be held, depress the HOLD switch. Then, adjust the VFO for best tuning. During hold, the mode may be temporarily changed. When Hold is released, the mode will revert to the original programmed mode setting after one scan cycle.
6. After the CH 7 upper (or lower) frequency limit has been reached, a "beep" sounds and the scan repeats from the CH 6 frequency.

NOTE:
1. Program scan is from CH 6 to CH 7, only.
2. During scan, only the CH 6 mode is used.
3. During scan or scan hold, a frequency can be stored into a memory channel selected by the M.CH switch by depressing the M.IN switch.
4. When the scan is on and the STEP switch is depressed, the step is 100 Hz.
5. When CH 6 and CH 7 are empty, there can be no scan.
6. Scanning is stopped during transmit and resumed after return to the receive mode.

4. Die Suchlaufgeschwindigkeit läßt sich am Geschwindigkeits-Regler (SPEED) (auf der Gehäuse-Oberseite) in Verbindung mit dem Raster-Schalter (STEP) nach Bedarf einstellen. Dabei die für den betreffenden Frequenzbereich und die Betriebsart geeignete Suchlaufgeschwindigkeit wählen.
5. Beim Empfang der gewünschten Gegenstation den Anhalte-Schalter (HOLD) zum Anhalten des Suchlaufs drücken, dann die Feinabstimmung am VFO vornehmen.
Nach dem Anhalten des Suchlaufs kann vorübergehend auf eine andere Betriebsart umgeschaltet werden. Nach Auslösen des Anhalte-Schalters (HOLD) schaltet das Gerät nach einem Suchlaufdurchgang wieder auf die ursprüngliche Betriebsart um.
6. Nachdem der Suchlauf die im Kanal 7 gespeicherte obere (oder untere) Grenzfrequenz erreicht hat, ertönt ein Signalton und der Suchlauf beginnt von vorn bei der im Kanal 6 gespeicherten Grenzfrequenz.

HINWEISE:
1. Programmierbarer Suchlauf ist nur innerhalb des durch die Kanäle 6 und möglich 7 vorgegebenen Frequenzbereichs möglich.
2. Während des Suchlaufs ist nur die im Kanal 6 gespeicherte Betriebsart maßgeblich.
3. Während des Suchlaufs oder der Suchlaufpausen, läßt sich eine beliebige Frequenz in einem am Kanal-Drehschalter (M. CH.) vorgewählten Speicherkanal durch Betätigung der Eingabe-Taste (M. IN) einlesen.
4. Wird der Rasterschalter (STEP) während des Suchlaufs betätigt, arbeitet der Transceiver mit einem Suchlaufraster von 100 Hz.
5. Sind keine Grenzfrequenzen in die Kanäle 6 und 7 eingegeben worden, ist kein programmierbarer Suchlauf möglich.
6. Der Suchlauf wird bei Übergang auf Sendebetrieb sofort abgebrochen und bei Wiederaufnahme des Empfangsbetriebs fortgesetzt.

4. On peut régler la vitesse de balayage à l'aide de la commande de vitesse se trouvant sur le panneau supérieur, et du commutateur à gradins (STEP). Sélectionner une vitesse de balayage appropriée à la fréquence et au mode chisis.
5. Lorsque la station chisie est reçue et que sa fréquence doit être maintenue, appuyer sur la touche HOLD. Régler ensuite le VFO pour obtenir le meilleur accord. Pendant la suspension, le mode peut temporairement changer. Lorsque la suspension est libérée, le mode revient sur le mode d'origine programmé après un cycle de balayage.
6. Après avoir atteint la limite de la fréquence supérieure (ou inférieure) du CH 7, un "bip" résonne et le balayage reprend à partir de la fréquence du CH 6.

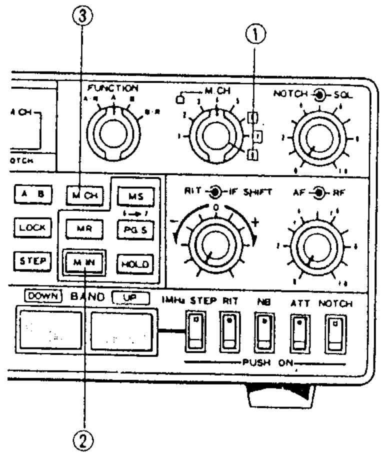
REMARQUE:
1. Le balayage de programme s'effectue uniquement du CH 6 au CH 7.
2. Durant le balayage, seul le mode CH 6 est utilisé.
3. Durant le balayage ou le maintien (suspension) du balayage, on peut mettre en mémoire une fréquence dans un canal sélectionné par le sélecteur M. CH en appuyant sur la touche M. IN.
4. Lorsque le balayage est en cours et que le commutateur à gradins est enclenché, le gradin est de 100 Hz.
5. Il ne peut y avoir de balayage lorsque les CH 6 et CH 7 ne sont pas occupés.
6. Le balayage est arrêté pendant la transmission et reprend après le retour sur le mode de réception.

4. La velocidad de exploración puede ajustarse gracias al control de velocidad situado en el panel superior, junto con la llave STEP. Seleccionar la velocidad de exploración apropiada para el modo y la frecuencia seleccionados.
5. Cuando se reciba la estación deseada y esa frecuencia ha de retenerse, presionar la llave HOLD. Luego, ajustar el VFO para obtener la mejor sintonización. Durante la retención, el modo podrá cambiar temporalmente. Cuando se libere la retención, el modo volverá al ajuste original de modo programado una vez de haber transcurrido un ciclo de exploración.
6. Una vez alcanzado el límite de frecuencia superior (o inferior) del canal 7, suena un aviso y la exploración se repite desde la frecuencia del canal 6.

NOTAS:
1. La exploración de programas es solamente desde el canal 6 al 7.
2. Durante la exploración solamente se utiliza el modo del canal 6.
3. Durante la exploración o retención de exploración podrá almacenarse una frecuencia en un canal de memoria seleccionado por la llave M.CH presionando para ello la llave M.IN.
4. Cuando la exploración esté activada y la llave STEP esté presionada, el paso es de 100 Hz.
5. Cuando los canales 6 y 7 estén vacíos no habrá exploración.
6. La exploración cesa durante la transmisión y se reanuda después de volver al modo de recepción.

4. La velocità di scansione può essere regolata per mezzo del comando apposito ubicato sul pannello superiore dell'apparecchio. Selezionare la velocità di scansione più appropriata per la frequenza e il modo selezionati.
5. Quando si incontra la stazione desiderata, premere l'interruttore di sospensione della scansione (HOLD) per fermare la frequenza corrispondente. Regolare quindi il VFO in modo da ottnere la miglior sintonizzazione possibile. Durante la sospensione della scansione, è possibile modificare il modo, provvisoriamente. Liberando l'interruttore HOLD, il modo ritorna ad essere quello originale.
6. Al raggiungimento del limite superiore (o inferiore) del canale 7, si sente un bip, e la scansione si ripete a partire dalla frequenza del canale 6.

NOTE:
1. La scansione viene eseguita solo dal canale 6 al canale 7.
2. Durante la scansione viene usato solo il modo del canale 6.
3. Durante la scansione e la sospensione della scansione è possibile memorizzare il canale selezionato per mezzo dell'interruttore M. CH, premendo l'interruttore M. IN.
4. Durante la scansione, se si preme l'interruttore STEP, gli scaglioni di sintonizzazione sono di 100 Hz.
5. Se i canali 6 e 7 sono vuoti, nessuna scansione è possibile.
6. La scansione viene interrotta durante la trasmissione e riprende quando l'apparecchio ritorna al modo di ricezione.



① Place at "8".
② Input the reception frequency, then the transmit frequency.
③ Pressing the switch TWICE allows transmission and reception on different frequencies.

① Auf „8" stellen.
② Die Empfangsfrequenz eingeben, danach die Sendefrequenz.
③ Durch Drücken dieses Schalters ist Sende- und Empfangsbetrieb mit unterschiedlichen Frequenzen möglich (auch auf unterschiedlichen Bänden und Betriebsarten).

① Régler sur "8".
② DEUX appuis consécutifs sur cette touche permettent d'effectuer la transmission et la réception sur des fréquences différentes.
③ Introduire la fréquence de réception puis la fréquence de transmission.

① Ponerla en "8".
② Presionando DOS VECES esta llave es posible la transmisión y recepción en diferentes frecuencias.
③ Dar entrada a la frecuencia de recepción y luego a la frecuencia de transmisión.

① Portare su 8.
③ Premendo questo interruttore due volte, si può trasmettere e ricevere su due frequenze diverse.
② Impostare prima la frequenza di ricezione e poi quella di trasmissione.

● Memory CH 8 reception and transmission operation

1. Place the M.CH switch to "8".
2. Input the reception frequency and mode using the M.IN switch.
3. The usual data entry "beep" is emitted as a pulse train. Input the transmission frequency (and mode).
4. The "beep" ceases.
5. Depress the M.CH switch. "Split" frequency operation (transmission and reception on different frequencies are programmed into CH 8.)

NOTE:

1. Different modes and/or bands can also be programmed for transmission and reception.
2. If the M.IN switch is depressed twice in succession, this memory can be used as an ordinary memory, now having the same frequency for both transmission and reception.

● Sende- und Empfangsbetrieb auf dem Speicherkanal 8

1. Den Kanal-Drehschalter (M. CH.) auf „8" einstellen.
2. Diee Empfangsfrequenz und Betriebsart durch Drücken der Taste M. IN. in den Festkanal 8 eingeben.
3. Die Eingabe dieser Daten wird durch einen andauernden Signalton (Impulsfolge) quittiert. Anschließend die Sendefrequenz und Betriebsart in der gleichen Weise eingeben.
4. Nach beendeter Eingabe verstummt der Signalton.
5. Den Schalter M. CH drücken. Dadurch wird der Transceiver auf Sende- und Empfangsbetrieb mit unterschiedlichen Frequenzen im speicherkanal 8 programmiert.

HINWEISE:

1. Es ist auch möglich, unterschiedliche Betriebsarten und/oder Bander für Sende- und Empfangsbetrieb zu programmieren.
2. Durch zweimaliges aufeinanderfolgendes Drücken der Taste M. IN. kann der Semi-Duplex-Speicherkanal 8 als normaler Speicherplatz umgeschaltet werden. Der Transceiver arbeitet dann in Simplexbetrieb mit gleicher Sende- und Empfangsfrequenz.

● Réception et transmission de la mémoire du canal 8 (CH 8)

1. Mettre le sélecteur M. CH sur "8".
2. Introduire la fréquence de réception et le mode à l'aide de la touche M. IN.
3. Le "bip" habituel d'entrée de données est émis comme un train d'impulsions. Introduire la fréquence de transmission (et le mode).
4. Le "bip" cesse de résonner.
5. Appuyer sur la touche M. CH. Fonctionnement de la fréquence "fractionnée" (La transmission et la réception sur des fréquences diverses sont programmées dans le canal 8).

REMARQUE:

1. Des modes et/ou des gammes d'ondes (bandes) divers peuvent également être programmés pour la transmission et la réception.
2. Si on appuie deux fois de suite sur la touche M. IN, cette mémoire peut être utilisée en tant que mémoire normale, ayant alors la même fréquence en transmission et en réception.

● Operación de transmisión y recepción del CH 8 de memoria

1. Poner la llave M.CH en "8".
2. Dar entrada a la frecuencia de recepción y al modo utilizando la llave M.IN.
3. El sonido de entrada de datos normal se emite como un tren de impulsos.
Dar entrada a la frecuencia de transmisión y al modo.
4. El sonido cesa.
5. Presionar la llave M.CH. Se lleva a cabo la operación de frecuencia separada (la transmisión y recepción en frecuencias diferentes se programan en el CH 8).

NOTAS:

1. Diferentes modos y/o bandas también pueden programarse para transmisión y recepción.
2. Si la llave M.IN se presiona dos veces sucesivamente, esta memoria podrá utilizarse como una memoria ordinaria, teniendo ahora la misma frecuencia para la transmisión y la recepción.

● Ricezione e trasmissione con il canale 8

1. Portare l'interruttore M. CH in posizione 8.
2. Immagazzinare nella memoria la frequenza di ricezione ed il modo usando l'interruttore M. IN.
3. L'avvenuta memorizzazione viene confermata da un tono bip. Impostare la frequenza e il modo di trasmissione.
4. Il tono bip si spegne.
5. Premere l'interruttore M. CH. Si ha così il funzionamento a frequenza sdoppiata (la frequenza di trasmissione è cioè diversa dalla frequenza di ricezione). Le due frequenze sono memorizzate nel canale 8.

NOTE:

1. È possibile programmare un modo e una banda diversi per la ricezione e la trasmissione.
2. Premendo l'interruttore M. IN due volte consecutive, questa memoria può anche essere usata come memoria normale, e cioè con la medesima frequenza per la trasmissione e la ricezione.

5.8 MOBILE OPERATION

Being compact in design, this transceiver is ideal for mobile operation. Satisfactory mobile operation is achieved through proper power and antenna connection, and thoughtful transceiver installation and adjustment.

5.8.1. TS-430S INSTALLATION

Secure the TS-430S under the dashboard using an optional MB-430 mounting bracket. As an alternative, use strapping, making sure that the TS-430S will not slip out of place while operating the vehicle.

NOTES:
1. Do not install the TS-430S near the heater outlet.
2. Allow sufficient space behind the TS-430S to ensure proper ventilation.

5.8.2. CONNECTING THE POWER CABLE

When connecting or disconnecting the power cable to or from the power connector, be sure that the power switch is always in the "OFF" position. Observe polarity of the cable. The TS-430S operates on 13.8V DC, negative ground. Battery polarity must be correct. The power cord is color coded.:

POWER CABLE

CAUTION: Observe battery polarity.

Connect the TS-430S power cable to the battery terminals, with consideration to current requirements and noise prevention. The maximum current drawn by the TS-430S reaches to between 18 and 20A when transmitting. Therefore, the cable should be made as short as possible, using the specified fuse. Also, determine that the power system of the car (including the battery and generator or alternator) will handle the increased load of the TS-430S.

Route battery and ANTENNA leads away from all high voltage secondary circuits to prevent ignition noise interference.

5.8.3. MOBILE ANTENNA

(1) Antenna Installation

Use a sturdy mount for the mobile antenna since HF antennas are larger (and have more wind load) and are heavier than VHF antennas. A bumper mount is recommended for general use. The ground side of the mount must be well grounded to the car body, since the body itself functions as the ground plane for the mobile antenna.

NOTES:
1. Some cars have plastic bumpers. For such cars, ground the antenna mount to the body.
2. When tuning a newly installed antenna, use the following procedure:

- Turn the CAR control fully counterclockwise for minimum transmit power.
- With the transceiver in transmit mode, raise transmit power output slowly by rotating the CAR control clockwise. The antenna should be adjusted with minimum power.
- Transmitting with full power is recommended only after the antenna has been adjusted for a VSWR below 1.5:1.

3. Antenna installation is critical for successful mobile operation. For further information refer to THE RADIO AMATEUR'S HANDBOOK, RADIO HANDBOOK, or other texts.

(2) Coaxial Cable Connection

When the antenna is mounted on the vehicles bumper, the coaxial cable from the antenna can be routed through a drain hole in the trunk. When the antenna is roof mounted pass the cable between the body and door. Leave a drip-loop at the lowest point in the cable before entry into the vehicle to prevent water from entering the

(3) Antenna Adjustment

Some mobile antennas are not designed at 50-ohm impedance. In this case, impedance matching between the antenna and the coaxial cable (50Ω) is required. This can be achieved by using an antenna matching device or coupler.

The antenna to be used should first be checked with a dip meter to insure that it is designed for your operating band, then the impedance matching should be checked with an SWR meter.
The VSWR should preferably be less than 1.5:1 for satisfactory operation. For antenna adjustment refer to the antenna instruction manual.

5.8.4. NOISE REDUCTION

In motor vehicles, noise is generated by the ignition system. Other sources of noise include the wiper and heater motors.
Although the TS-430S is equipped with a noise blanker to minimize ignition noise, it is imperative that some preventive measures be taken to reduce the noise to the lowest possible level.

(1) Antenna location Selection

Since ignition noise is generated by the vehicles engine, the antenna must be installed as far from the engine as possible.

(2) Antenna Matching

In general, mobile antennas have a lower impedance than the 50-ohm coaxial cable used to feed them, resulting in a mismatch between the antenna and the coax. Such trouble can be eliminated by using an antenna tuner between the TS-430S and the coaxial cable.

(3) Bonding

The component parts of motor vehicles, such as the engine, transmission, muffler system, accelerator, etc., are coupled to one another at DC and low frequencies, but are isolated at high frequencies. By connecting these parts using heavy, braided ground straps, ignition noise can be reduced. This connection is called "bonding".

(4) Use ignition Suppressor Cable or Suppressor Spark Plugs

Noise can be reduced by using spark plugs with internal resistors, or resistive suppressor ignition cable.

(5) Battery Power Connection

It is recommended that battery power be supplied directly to the TS-430S from the battery terminals.

CAUTION
Disconnect the TS-430S before jump-starting or before charging the battery.

(6) Battery Capacity

The power system of a motor vehicle is comprised of a battery and an alternator (which generates power while the engine is running) to supply current to loads or to charge the battery.
Since the transceiver draws high current during transmit, care should be excersised so the power system is not overloaded. When using the transceiver, the following points should be observed from the viewpoint of battery maintenance:
1. Turn the transceiver OFF when the lights, heater, wipers and other high-draw accessories are used.
2. Avoid transceiver operation when the engine is not running.
3. If necessary, use an ammeter and/or a voltmeter to check battery condition.

5.9 FIXED STATION OPERATION

5.9.1. Power

The TS-430S requires more than 18A at 13.8 VDC when transmitting full power. Us[illegible]e model PS-430 [illegible]ver supply fo[illegible]d stations.

5.9.2 ANTENNAS

For HF fixed-station operation, an antenna specifically designed for amateur operation is recommended. Antenna types include wire antennas, verticals, rotary beams, and other antenna types. HF antennas are quite large and must be installed to withstand strong wind, heavy rain, etc.
Any antenna used with the TS-430S should be of 50-ohm impedance and should be connected using an appropriate coaxial cable such as RG-8/U. Impedance matching is important. Impedance mismatching will result in a high VSWR and power loss, or can cause unwanted harmonic radiation and interference (TVI, BCI).
The impedance match can be checked with an SWR meter. Generally, satisfactory operation is assured when the VSWR (Voltage Standing Wave Ratio) is less than 1.5: 1.
A rotary beam antenna is very effective for DX operation in the 14, 21 and 28 MHz bands. (Fig. 5-11)

NOTE:
Protect your equipment – use a lightning arrestor.

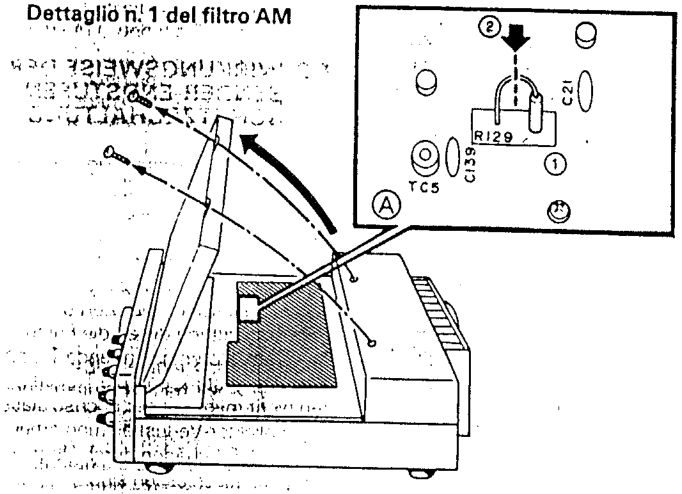
5.8 MOBILBETRIEB

Dank seiner kompakten Abmessungen ist der TS-430S geradezu prädestiniert für den Mobilbetrieb. Bei vorschriftsmäßigem Einbau in das Fahrzeug und genauer Beachtung der Anschlußanweisungen für Antenne und Stromversorgung ist ein einwandfreier Betrieb des TS-430S gewährleistet.

5.8.1 Einbau des TS-430S in ein Kraftfahrzeug

Der Transceiver wird mit Hilfe der als Sonderzubehör erhältlichen Mobil-

AM filter detail No. 1
Schritt 1 beim Einbau des A3E-filters
Détail no. 1 du filtre AM
Filtro de AM, detalle Nº 1
Dettaglio n. 1 del filtro AM



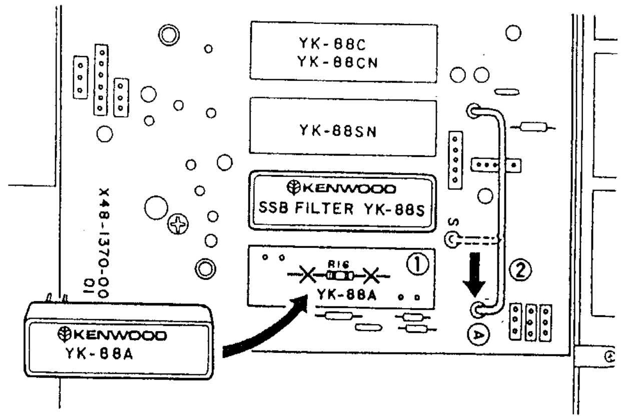
Ⓐ = Control unit
Steuerungs-Baugruppe
Unité de commande
Unidad de control
Unità di comando

① = AM FILTER
A3E-Filter
FILTRE AM
FILTRO DE AM
FILTRO AM

② = Cut here
Hier durchtrennen oder auslöten
Couper ici
Cartar aquí
Tagliare qui

Fig. 6-1
Abb. 6-1

AM filter Detail No. 2
Schnitt 2 beim Einbau des A3E-Filters
Détail no. 2 du filtre AM
Filtro de AM, detalle Nº 2
Dettaglio n. 2 del filtro AM

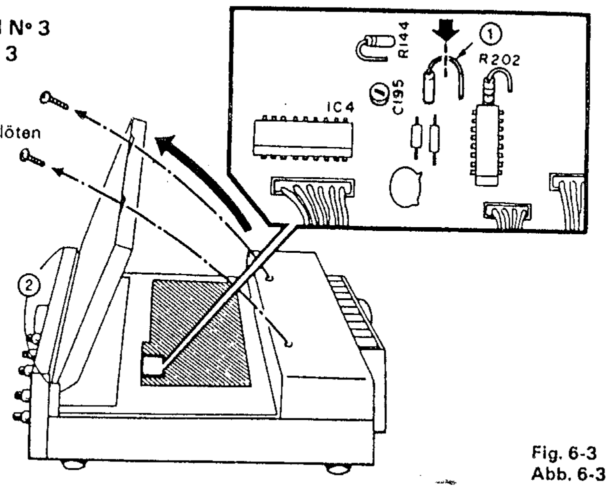


① = Cut here
Hier durchtrennen oder auslöten
Couper ici
Cortar aquí
Tagliare qui

② = Move
Umlöten
Déplacer
Mover
Muovere

Fig. 6-2
Abb. 6-2

AM filter installation No. 3
AM-Filterinstallation Nr. 3
Installation filtre AM Nº 3
Instalación del filtro de AM Nº 3
Montaggio del filtro AM, n. 3



① = Cut here
Hier durchtrennen oder auslöten
Couper ici
Cortar aquí
Tagliare quí

② = Loosen
Lösen
Desserrer
Aflojar
Allentane

Fig. 6-3
Abb. 6-3

TS-430S Internal Wiring
Beschaltung der Fornschalt-Buchse (REMOTE)
Câblage interne du TS-430S
Cableado interno del TS-430S
Cablaggio interno del TS-430S

Ⓐ = Not used
Nicht beschaltet
Pas utilisé
No se utiliza
Non usato

Ⓑ = From STBY switch (PTT circuit for foot switch)
Vom PTT-Schalter (z.B. Fußfernschalter)
A partir du commutateur STBY (Circuit PTT pour interrupteur à pédale)
De la llave STBY (circuito PTT para la llave de pie)
Dall' interruttore STBY (circuito PTT per interruttore a piede)

Ⓒ = GND
Masse
MASSE
TIERRA
MSSA A TERRA

Ⓓ = ALC input
ALC-Eingang
Entrée ALC
Entrtada ALC
Ingresso ALC

Ⓔ = Speaker output
Lautsprecherausgang
Sortie du haut-parleur
Salda del altavoz
Uscita altoparlante

Ⓕ = Relay common
Mittenkontakt Relais
Relais commun
Relé común
Relè, comune

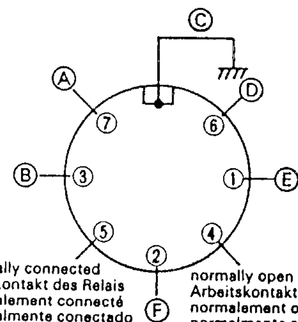


Fig. 6-4
Abb. 6-4

to be continued: forgesı suite: ıtinuará: Continua:

6

6.1 INSTALLING THE OPTIONAL FILTERS

1. Remove the power connector from the radio.
2. Using a #2 philips screwdriver, remove the top cover (8 screw). Be careful of the VOX controls, and the speaker lead, which may be plugged.
3. Loosen the two side screws and remove the 2 screws securing the IF unit bracket. Swing the bracket up slightly to access and remove the two heat sink screws. Swing the assembly down.
4. Remove 7 screws from the IF unit. Switch the board forward. Protect the top of the front panel from scratching.
5. Using a 45W (or less) soldering pencil, clear the 6 holes for the filter, if they are filled with solder. when installing an AM filter, first revome R16 on the IF unit, and cut the 129 lead on the Control unit.
6. There is no polarity to the filter. Install the filter into its position on the IF unit. Solder the 2 mounting tabs, and the 4 input and output pins to the circuit board. Solder sparingly, and heat the connections only long enough to insure a good solder joint. Don't overheat the filter or circuit board.
7. Carefully inspect your soldering. Be certain that all pins are actually soldered, and that you have not soldered across any spots on the board or between any of the pins on the filter. Clip the pins flush to be board.
8. Replace the IF unit in its place. Make certain no wires will be pinched underneath the board. Replace the 7 screws for the board, plus the two heat sink screws. Tighten the 2 side screws and replace the 2 rear bracket screws. (See that the wire harness does not interfere with the PG scan speed control).
9. Move the connection as illustrated when an AM filter is installed.
10. Reconnect the speaker lead, and reinstall the top cover.
11. Apply power and verify your work. Filter installation is now complete.

6.2 HOW THE TX FINAL TRANSISTORS ARE PROTECTED

Final transistor protection is provided by sampling the reflected power. As the reflected power is increased (higher SWR) transmitter drive is reduced, thus decreasing input to the final transistors. This in turn reduces collector loss, protecting the final transistors.

6.3 OPTIONAL 10Hz DISPLAY RESOLUTION

If you would like 10Hz instead of the supplied 100 Hz display resolution, cut the jumper as shown on the Control unit.

6.4 OPERATION WITH A LINEAR AMPLIFIER

Operation with a linear amplifier.
TS-430S internal wiring.
Pin 6 ALC input
Connector Metal Shell is Ground
Pin 2, Relay Common
Pin 4, Relay N.O.
Use shielded line for both AL and RL (control line).
Initial linear amplifier tune-up should be performed with the exciter 50% power, to reduce wear-and-tear on both the linear, and the exciter.
Use of a dummy load is strongly suggested, since the bands are already sufficiently crowd.
The TS-430S may be operated with any conventional linear amplifier which will accept up to approximately 100 watts RF drive, has a low current DC operated keying circui and returns approximately −8 ~ −10V DC ALC (adjustable) back to the exciter.

6.1 EINBAU DER ZUSATZ-QUARZFILTER

(Diese Arbeiten sollten zweckmäßigerweise dem Kenwood-Amateurfunk-Vertragshändler überlassen bzw. nur von erfahrenen Funkamateuren selbst durchgeführt werden).
1. Steckverbinder des Gleichstromversorgungskabels an der Rückwand abklemmen.
2. Die acht Befestigungsschrauben für den Gehäusedeckel mit einem passenden Kreuzschlitzschraubendreher Größe 2 herausdrehen und den Deckel abnehmen.
Dabei darauf achten, daß die drei VOX-Regler und der SPEED-Regler nicht beschädigt und das Verbindungskabel des Lautsprechers nicht abgerissen werden.
3. Die beiden seitlichen Schrauben und die beiden Schrauben, mit denen der Zf-Teil am Chassis befestigt ist, herausdrehen. Das Chassis etwas nach oben klappen, dann die beiden Befestigungsschrauben für den Kühlkörper entfernen. Das Chassis wieder nach unten klappen.
4. Die sieben Befestigungsschrauben des Zf-Teils herausdrehen. Dabei darauf achten, daß die Oberkante der Frontplatte nicht verkratzt wird.
5. Die beim Tauchlöten evtl. verschlossenen sechs Durchstecköffnungen für die Kontaktstifte und Befestigungslaschen für die Quarzfilter mit einem 30-45 Watt-Lötkolben und einem Lötzinnabsauger freilegen. Vordem Einbau des A3E-Quarzfiltres zunächst R16 aus der Zf-Leiterplatte auslöten (siehe Abb. 6-2). Danach den einen Anschlußdraht des Widerstandes R129 auf der Steuerungs-Leiterplatte (Control unit) durchtrennen (siehe Abb. 6-1) oder besser den ganzen Widerstand auslöten.
6. Da die Zusatz-Quarzfilter ungepolt sind, ist ihre Einbaulage belanglos. Die vier Kontaktstifte und zwei Befestigungslaschen von oben her in die freigelegten Bohrungen der Zf-Leiterplatte einführen, das Filter fest gegen die Platte drücken und zuerst die Laschen, dann die Kontaktstifte mit den zugehörigen Leiterbahnen auf der Folienseite verlöten. Diese Lötarbeiten so zügig wie möglich durchführen und die Lötstellen nicht zu stark erhitzen, da das Quarzfilter sonst unbrauchbar wird und sich die Leiterbahnen von der Platine ablösen können.
7. Die Zf-Leiterplatte nochmals auf einwandfreie Beschaffenheit aller Lötstellen überprüfen. Dabei darauf achten, daß keine „Lötzinnbrücken" zwischen den dicht benachbarten Leiterbahnen entstanden sind, die unbedingt entfernt werden müssen. Die überstehenden Enden der Kontaktstifte dicht an der Leiterplatte abschneiden.
8. Die Zf-Leiterplatte nun wieder im Chassis einbauen, dabei darauf achten, daß keine Anschlußdrähte auf der Unterseite der Platte eingeklemmt werden. Die 7 Schrauben, mit denen die Platte am Chassis befestigt ist, die beiden Befestigungsschrauben für den Kühlkörper, die beiden seitlichen und die beiden hinteren Schrauben anbringen und festziehen. Auch dabei darauf achten, daß der Kabelbaum nicht zwischen Chassis und Kühlkörper bzw der Baugruppe mit den VOX-Reglern eingeklemmt wird.
9. Wenn das A3E-Filter YK-88A (6 kHz) eingebaut wurde, die Drahtbrücke auf der Zf-Leiterplatte wie auf Fig. 6-2 gezeigt, von Punkt S nach Punkt A umlöten.
10. Das Lauts[illegible]cherkabel wieder anschließen und den Gehäusedeckel montieren.
11. Den Transceiver mit dem Netzteil verbinden, einschalten und auf einwandfreie Funktion überprüfen. Der Einbau der Zusatz-Quarzfilter ist damit beendet.

6.2 WIRKUNGSWEISE DER SENDER-ENDSTUFEN-SCHUTZSCHALTUNG

ZumSchutz der kostspieligen Leistungstransistoren der Sender-Endstufe wird die reflektierte Leistung durch eine Sensorschaltung fortlaufend gemessen. Steigt die reflektierte Leistung bei zunehmenden SWV ebenfalls an, reduziert die Schutzschaltung die an die Enstufen-Transistoren gelangende Treiberleistung so stark, daß die Transistoren nicht mehr mit der höchstzulässigen Kollektor-Verlustleistung arbeiten, so daß Schäden durch Überlastung ausgeschlossen sind.
Diese Schutzschaltung darf jedoch nicht ständig oder über längere Zeit beansprucht werden, da sie nicht für Dauerbetrieb konstruiert ist, sondern einen Schutz gegen zufällige Schäden bieten soll.

6.3 WAHLWEISE UMSTELLUNG DER DIGITAL-FREQUENZANZEIGE AUF 10 Hz AUFLÖSUNG.

(Diese Arbeiten sollten zweckmäßigerweise dem Kenwood-Amateurfunk-Vertragshändler überlassen bzw. nur von erfahrenen Funkamateuren selbst durchgeführt werden).

Falls anstelle der serienmäßigen Auflösung der letzten Digital-Anzeigestelle von ± 100Hz eine Auflösung von ± 10Hz gewünscht wird, die Drahtbrücke zwischen R144 und R202 auf der Steuer-Leiterplatte (X53-1290-00) durchtrennen (siehe Fig. 6-4) oder besser auslöten.

6.5 ACC CONNECTOR DATA/ZUBEHÖR-ANSCHLUßBUCHSE (ACC)/DONNEES DU CONNECTEUR ACC/DATOS DEL CONECTOR ACC/ DATI PER IL COLLEGAMENTO ACC

ACC connector output/Verknüpfungstabellen (Logikzustände am Ausgang ACC)/ Sortie du connecteur ACC/Salida del conector ACC/Uscita connettore ACC

Ⓐ [MHz] Ⓑ	No. 2 BD	No. 4 BC	No. 1 BB	No. 7 BA
0.15 ~ 0.4999	0	0	0	0
0.5 ~ 1.5999	0	0	0	1
1.6 ~ 2.4999	0	0	1	0
2.5 ~ 3.9999	0	0	1	1
4.0 ~ 6.4999	0	1	0	0
6.5 ~ 7.4999	0	1	0	1
7.5 ~ 10.4999	0	1	1	0
10.5 ~ 15.9999	0	1	1	1
16.0 ~ 22.9999	1	0	0	0
23.0 ~ 29.9999	1	0	0	1

Ⓐ [MHz]	Ⓑ No. 5 WRC
0.15 ~ 1.5999	1
1.6 ~ 1.9999	0
2.0 ~ 2.9999	1
3.0 ~ 3.9999	0
4.0 ~ 6.8999	1
6.9 ~ 7.4999	0
7.5 ~ 13.8999	1
13.9 ~ 14.9999	0
15.0 ~ 20.8999	1
20.9 ~ 21.9999	0
22.0 ~ 27.8999	1
27.9 ~ 29.9999	0

Ⓐ – Frequency band
Frequenzbereich
Bande de fréquence
Banda de frecuencia
Banda frequenza

Ⓑ – PIN No.
Kontakt Nr.
No. de BROCHE
Nº de CLAVIJA
Spillo n.

Note: Band output data is TTL level.
0 – Low
1 – High

Remarque: Les données de sortie de bande correspondent au niveau TTL
0 – Basse
1 – Haute

Nota: L'uscita di banda è il livello TTL
0 – Basso
1 – Alto

Hinweis: Bandausgang hat TTL-Pegel.
0 – Niedrig
1 – Hoch

Nota: Los datos de la salida de banda son para el nivel TTL
0 – Bajo
1 – Alto

Fig. 6-5
Abb. 6-5

ACC connector wiring
Beschaltung der ACC-Buchse
Câblage duconnecteur ACC
Cableado del conector ACC
Cablaggio connettore ACC

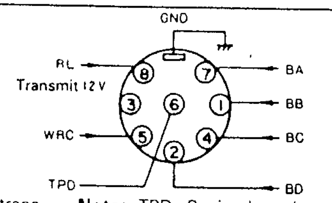


Fig. 6-6
Abb. 6-6

Note: TPD: Grounding this terminal reduces transmit output to approx. 50W.

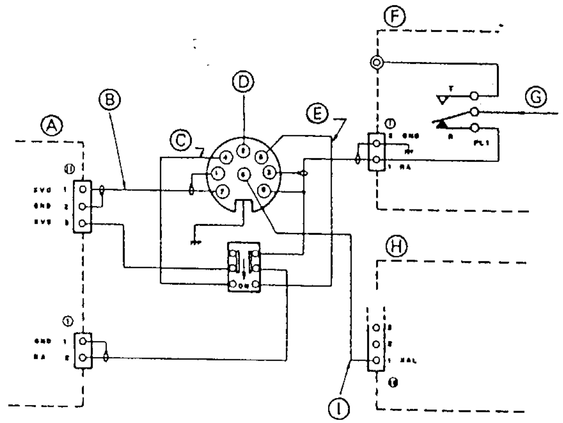
Hinwes: TPD: Durch Verbinden des Stiftes mit Masse geht die Sendeleistung um etwa 50W zurück (QRP-Betrieb).

Remarque: TPD: La mise à la terre de cette borne réduit la sortie de la transmission sur environ 50W.

Nota: TPD: Poniendo a tierra este terminal se reduce la salida de transmisión a 50W aproximadamente.

Nota: TPD: Collegando a terra questo terminale si riduce l'uscita di trasmissione a circa 50W.

X VTR Connector
Transverter-Buchse
Connecteur X VTR
Conector X VTR
Connettore X VTR



Ⓐ = RF UNIT
HF-Baugruppe
Unité RF
Unidad RF
Unità RF

Ⓑ = RF Output (Transmit)
Treiber-Ausgang (Sendung)
Sortie RF (Transmission)
Salida de RF (Transmisión)
Uscita RF (Trasmissione)

Ⓒ = To Transverter ON-OFF SW
Zum Transverter EIN-AUS-Schalter (nach Masse)
Vers le convertisseur ON-OFF SW
Al Transvertidor LLAVE DE ENCENDIDO Y APAGADO
All 'interruttore ON-OFF del transverter

Ⓓ = Relay Control (+12V ON transmit)
Relaisumschaltung (+12 V = bei Sendung)
Commande de relais (Transmission +12V ON)
Control de relé (+12V en transmisión)
Comando relè (transmissione ON +12V)

Ⓔ = RF Input From Transverter (RECEIVE)
Empfänger-Ausgang vom Transverter
Entrée RF à partir du convertisseur (RECEPTION)
Entrada de RF del transvertidor (RECEPCION)
Ingresso RF dal transverter (ricezione)

Ⓕ = From Transverter ALC
ALC-Steuersignal vom Transverter
A partir du convertisseur ALC
Del ALC Del Transvertidor
Dal Transverter ALC

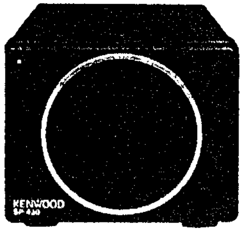
Ⓖ = FILTER UNIT
FILTER-Baugruppe
FILTRE
FILTRO
FILTRO

Ⓗ = From ANT
Von der Antenne
A partir de l'ANT
Desde la antena
Dall' antenna

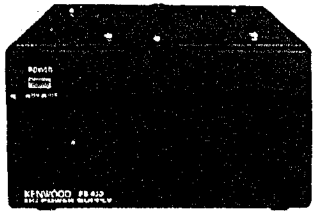
Ⓘ = IF UNIT
ZF-Baugruppe
UNITÉ IF
UNIDAD IF
UNNITÀ IF

Fig. 6-7
Abb. 6-7

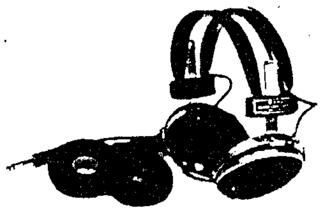
SP-430



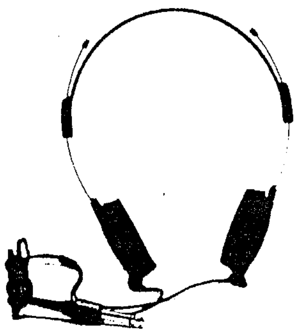
PS-430



HS-5



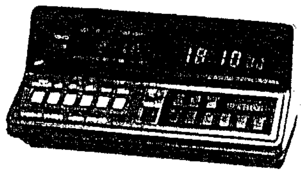
HS-6



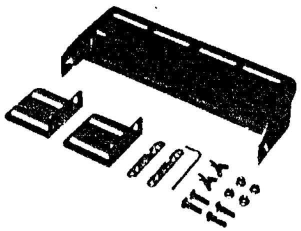
MC-60A



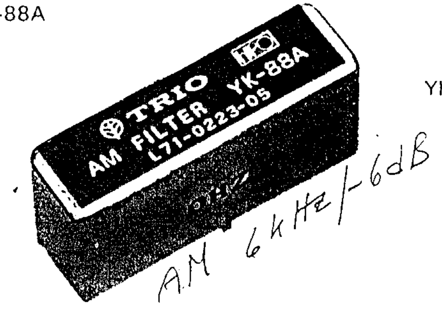
HC-10



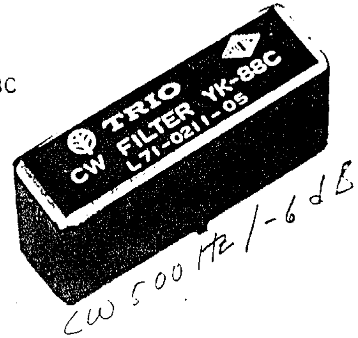
MB-430



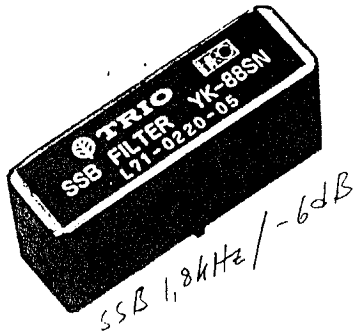
YK-88A



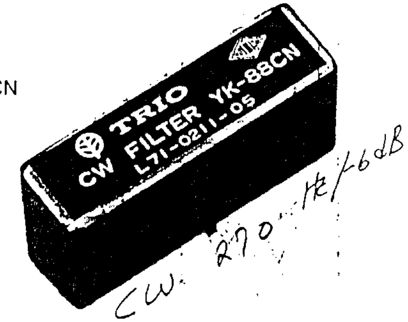
YK-88C



YK-88SN



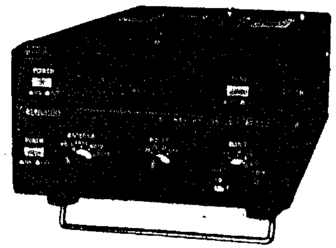
YK-88CN



AT-130

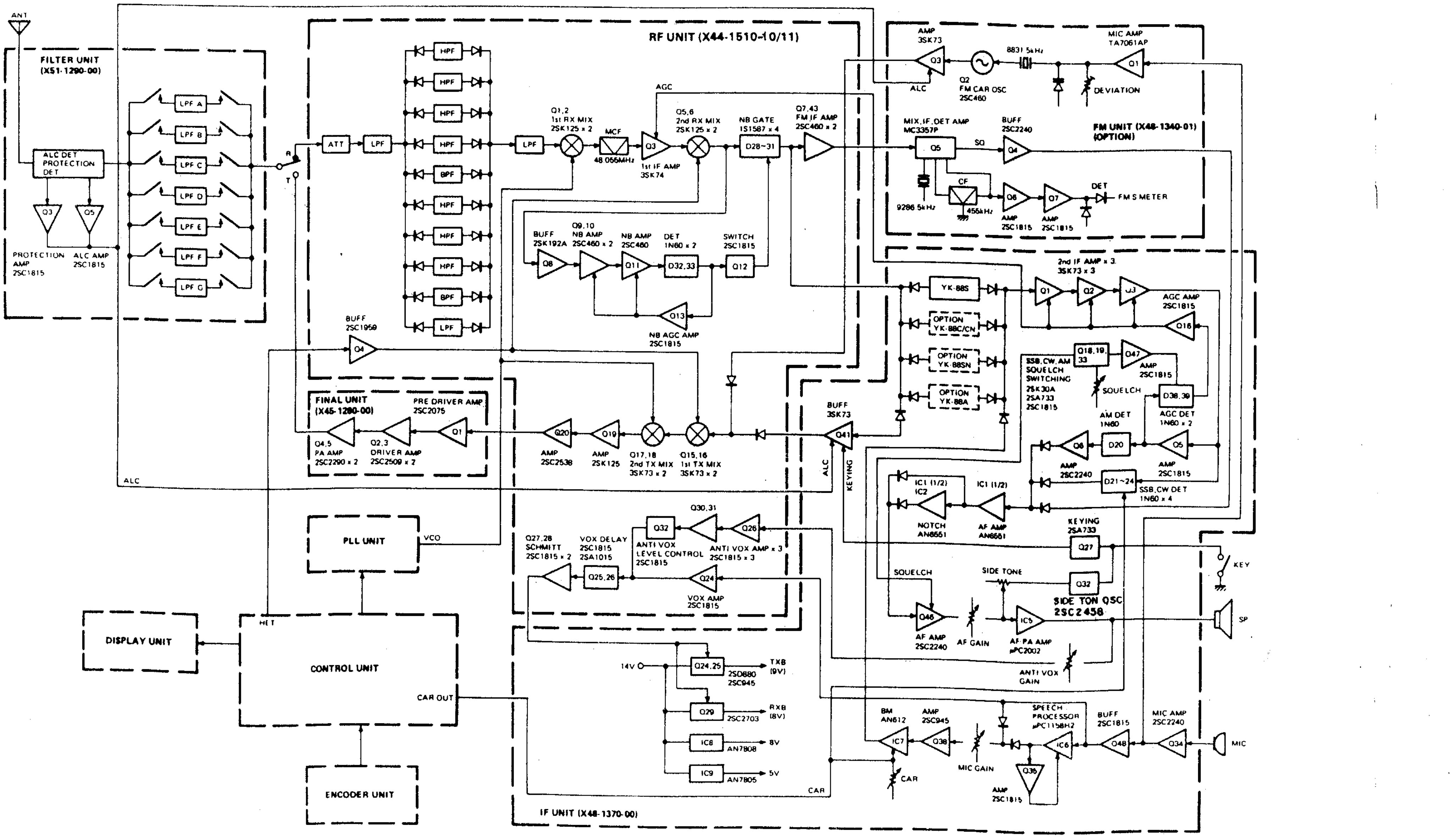


AT-250

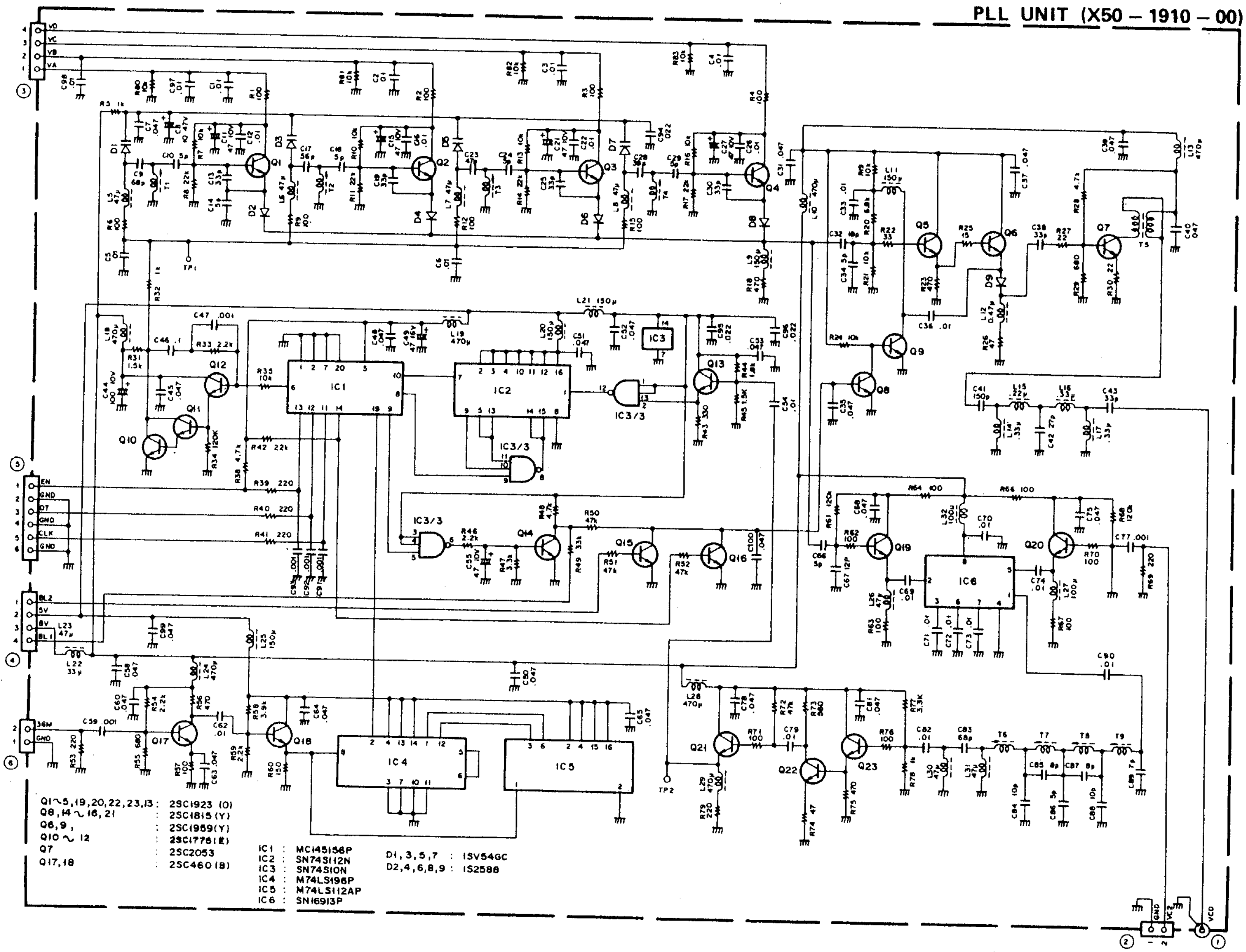


● BLOCK DIAGRAM ● BLOCKSCHALTBILD ● SCHEMA DE PRINCIPE
● DIAGRAMA EN BLOQUES ● SCHEMA A BLOCCHI

TS



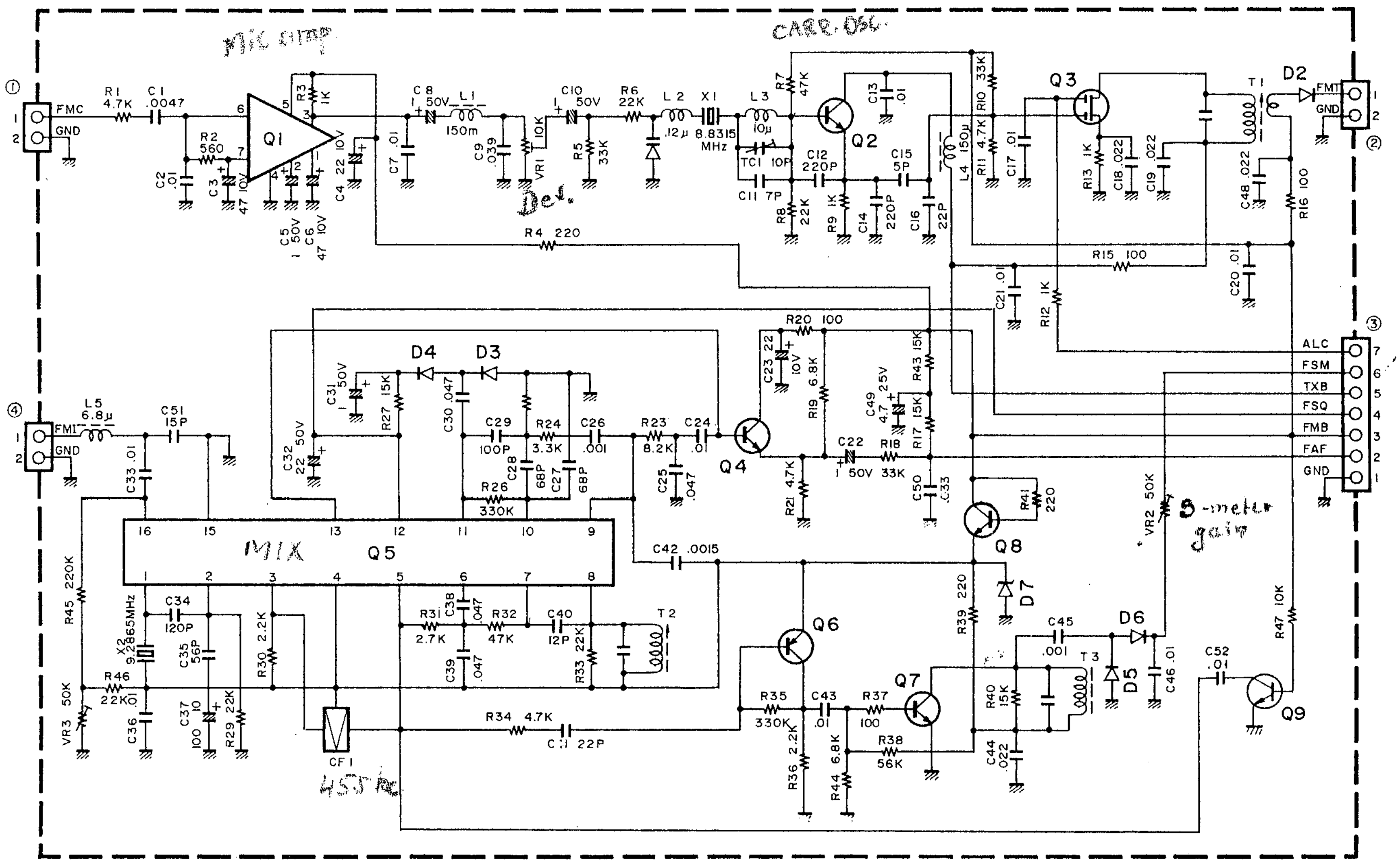
PLL UNIT(X50-1910-00)



IC6 : SN16913P

FM-430(オプション)

FM UNIT(X48-1340-01)

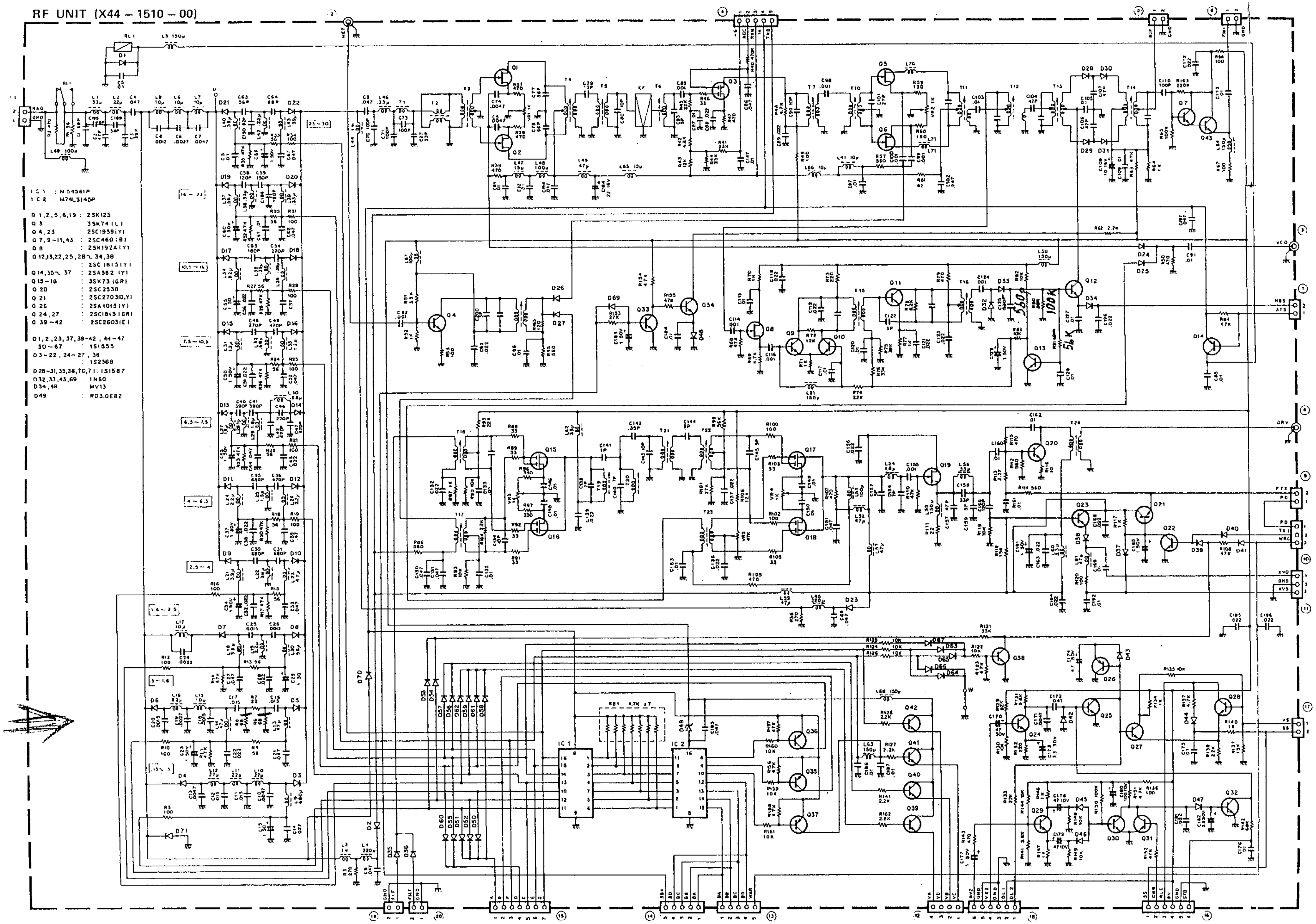


Q1	: TA7061AP	Q5	: MC3357P	D1	: IS2208
Q2	: 2SC460(B)	Q6	: 2SA1015(Y)	D2	: IS1555
Q3	: 3SK73(GR)	Q7～9	: 2SC1815(Y)	D3～6	: IN60
Q4	: 2SC2240(GR)			D7	: WZ071

4005—00(G)Ⓙ

RF UNIT(X44-1510-00)

変更内容（L 70，L 71の追加，C 104　100P→47P，ı ı2，T 13，C 104接続変更
インダクタンス記入なし，C 200追加）



IF UNIT(X48-1370-00)

